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PUBLIC COMMENTS

THURSDAY, MARCH 4, 2010 7:00 p.m.

In the Matter of AWA Goodhue, LLC, Applications for a Large Wind Energy Conversion System Site Permit and a Certificate of Need for the 78 MW Goodhue Wind Project in Goodhue County, Minnesota

PUC Docket Numbers: IP-6701/WS-08-1233

IP-6701/CN-09-1186

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Page 4 1 MR. HARTMAN: Why don't we go ahead and get started. Can you hear me back there? Everyone, 3 can you hear me? 4 Okay. Thank you. First of all, I'd like 5 to thank you for taking the time out of your schedules to attend the meeting. This is an 7 information/scoping meeting on the issue --8 UNIDENTIFIED: I can't hear you. 9 MR. HARTMAN: This is an information 10 meeting on the -- scoping meeting on the Goodhue 11 Wind Project. I'd first like to start by making 12 some introductions. My name is Larry Hartman, 13 H-A-R-T-M-A-N. I'm with the Minnesota Office of 14 Energy Security, which is located in the Minnesota 15 Department of Commerce. 16 With me tonight from our staff is 17 Ray Kirsch. Ray is over at the table with the blue 18 sweater, with the beard. Ray's been the appointed 19 public advisor for this project. And to Ray's left 20 is Deborah Pile. Deborah is the administrator of 21 the energy facilities permitting program. 22 might be one other person here from our agency later 23 on, I don't see him at the moment. 24 Bret Eknes is here from the Minnesota 25 Public Utilities Commission, and from the Minnesota

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Page 5
1
          Department of Health is Carl Herbrandson.
                     And why don't -- Chuck, would you like to
 3
          introduce the people from National Wind?
                     MR. BURDICK: I can do that in a little
 5
          bit.
 6
                     MR. HARTMAN: Okay. Why don't we do that
 7
          a little bit later on.
 8
                     As you came in tonight, there were a
 9
          number of handouts at the table. One was the green
10
                 This is just basically, fill this out and
11
          drop it in the box, if you haven't already, and that
12
          would just merely add you to our mailing list.
                                                            Ιf
13
          you're already on the list, you've been getting
14
          information from the Office of Energy Security, you
15
          don't need to fill it out, you don't need to pick it
16
          up either.
17
                     The other card we'd ask you to fill out
18
          is if you'd like to make a comment tonight, we'd ask
19
          you to fill out a card as a speaker. Deb has been
20
          collecting the cards and I'll call on the people in
21
          the order in which the cards were submitted to us
22
          tonight.
23
                     Some other handouts we had up there was,
24
          this is kind of the outline of what's going to be
25
          occurring this evening. The other handouts, we have
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Page 6 1 a comment sheet. If you choose not to say anything tonight, you certainly don't have to. There's a 3 comment sheet there, also. If you get home tonight and have that great idea you wished you would have 5 asked, you can fill out this form, fold it, put a stamp on it, tape it, and mail it to us. That has 7 to be received by our office on Friday, March 26th 8 at 4:30 p.m. If you choose not to mail it in, you can 10 also fax it me. My fax number is available in the 11 You can also e-mail me comments, my e-mail 12 address is located in some of the documents before 13 But, again, if you want to submit it in 14 writing, please send that in by the 26th. 15 We have some other -- excuse me --16 handouts at the table. One was just a sample 17 scoping decision as to what will be included in the 18 environmental report prepared for the certificate of 19 need process. And there are also a couple of 20 handouts describing the PUC need process. One was 21 the informal certificate of need process. It also 22 discusses the contested case process and it also 23 goes over the Minnesota Public Utilities Commission 24 criteria for making their need assessment, and 25 that's probably all I'll say about that for the

Page 7 1 moment, unless there are specific questions about that. 3 Chuck, this would probably be a good time 4 for the company to take a few minutes to do the 5 PowerPoint show they'd like to show you. Five, ten 6 minutes, something like that. 7 MR. BURDICK: Thanks, Larry. 8 Thanks, Larry, and thanks to everybody 9 for coming out tonight. Spring is in the air, so I 10 always find that part enjoyable. 11 My name is Chuck Burdick. I'm a senior 12 wind energy developer with National Wind. National 13 Wind is the developer for the Goodhue Wind Project. 14 Also from National Wind tonight we've got Pat 15 Pelstring, who is one of the cofounders of the 16 company. 17 Pat grew up in Luverne, Minnesota, and 18 came from a background of over 20 years in rural 19 economic development, which brought him into the 20 wind business and is his basis for approaching the 2.1 projects. We also have additional area experts here 22 to provide technical information if questions 23 related to that come up during our conversation 24 tonight. 25 A very brief overview of our project.

Page 8 1 It's 78 megawatts of wind energy. We're proposing 52 GE 1.5 megawatt turbines. And we structured this 3 around the community model in which we offer a 4 partnership to the community so that people can have 5 more than just a lease payment, but can also share 6 in the revenues of the project. 7 I should say it's primarily focused in 8 Belle Creek and Minneola Townships in Goodhue 9 County, and we also have project maps over on the 10 side if you want to take a look at them during the 11 course of the evening. 12 A quick history of the project. We got 13 our start around September of 2008. In December 14 2008, we formed an advisory board of local community 15 members, whom we meet with monthly and get feedback 16 about the project to help us craft a lease, to help 17 us understand what feedback we're getting from the 18 community, to help us really steer the project and 19 create a nice interface with the members of the 20 community. 2.1 In April 2009, we issued approximately 22 half of the lease area necessary for the project. 23 In July 2009, this past summer, we were selected by 24 Xcel Energy for a power purchase agreement. 25 was through a competitive bid process with a number

Page 9 1 of other wind projects across the state and across the region. 3 In October 2009, we submitted our site 4 permit application, which officially started our 5 public engagement process that the state administers, and tonight's meeting is a related part 7 of that. 8 Just a couple months ago, in December, we 9 selected the GE turbine through an agreement with 10 the American Wind Alliance, and last month we 11 officially have sufficient leases to site these GE 12 turbines. This spring we are looking forward to 13 furthering the design, to doing field surveys out in the area to identify every building and dimension of 14 1.5 the structure. 16 We'll be doing some bird studies to 17 measure the types and activities of the birds in the 18 area, and we'll be doing ongoing public outreach and 19 permitting events like this through the state's 20 process and some other voluntary events as well. 2.1 The economic impact of the project, all 22 landowners have been offered a participation 23 agreement where they can participate in the 24 financial benefit of the project. We expect that 25 during construction there will be approximately 150

Page 10 1 to 200 construction jobs in the construction workforce, and that construction activity is 3 expected to be six to 12 months in length. The ongoing operation of the project 5 would have two to five permanent jobs here in the area to maintain and service the wind towers. 7 Over the life of the project, 8 approximately \$20 million goes to the leaseholders and participants in the project, which we think is a 10 significant economic injection into the area. 11 addition, approximately \$6 million over the life of 12 the project comes through production taxes that the 13 project pays, 80 percent of which go directly to the 14 counties, 20 percent of which go to the townships. 15 At the beginning of the project back in 16 the fall of 2008, we did some environmental 17 screening, and we've continued to do environmental 18 The species of interest that came up in review. 19 that screening report include loggerhead shrike and 20 That's a focus area for our bird bald eagles. 21 studies this spring, and we have Westwood 22 Professional Services -- representatives from them 23 here tonight. They will be the group conducting the 24 studies and have done the research to date on that. 25 Additional studies and evaluations that

Page 11 1 go on as part of the project include cultural resources, meaning archeology, bats, wetlands, and 3 communication paths. Minnesota has an approximately 14-year 5 history with wind facilities, and there are 6 approximately 1,400 turbines all across the state. 7 Minnesota is recognized as a leader in wind energy 8 and is in the top five states of wind installation 9 across the country. 10 The turbine we selected is the GE 11 turbine. Approximately 13,000 have been installed 12 worldwide. GE has an 42 percent market share. 13 We're happy this is an American company with an 14 excellent project and they have a great operational 15 history. GE is a company of -- and a brand that's 16 very committed to a rigorous and conservative 17 engineering approach to their project. 18 On the issue of setbacks, which I know is 19 near and dear to many people's hearts, we've taken a 20 voluntary 1,500 setback from nonparticipating 21 residences, and that is three times the state 22 minimum of 500 feet. That's five football fields of 23 length, over a quarter mile, and is greater than any 24 previous Minnesota permitted project for a standard 25 setback for nonparticipating residents.

Page 12 1 This gives a little perspective on the sound from the towers and what that setback will do 3 for the sound profile. All right. Sound is measured in decibels. The decibel scale here 5 (indicating), I've given some comparable things, 60 6 decibels is a conversational level. 50 decibels is 7 the sound limit put in place by the Minnesota 8 Pollution Control Agency. A GE turbine at 1,500 feet is approximately 40 decibels, and 35 decibels 10 is background rural sounds. 11 This map (indicating), I'm not sure how 12 well it shows up on the screen, but we have it 13 printed over on the side of the room. It shows the 14 residences and setbacks in the area. This has been 15 updated from what was in our site permit 16 application. In the site permit application we used 17 aerial photography and we have since employed the 18 county records and done driveway verification on 19 residences. There's still additional work to be 20 done on -- as I mentioned, we'll be doing a field 2.1 survey this spring that will essentially GPS locate 22 every structure in the area. 23 One final point I'd like to point out, 24 we've heard people in the area calling for a 25 half-mile setback, and I just want to highlight

Page 13 1 the -- what a half-mile setback looks like across the state. On the left, I have a 1,500-foot setback 3 and the red areas are areas that incompatible with a 4 1,500 setback and the green areas are the areas that 5 compatible with that. So it shows the land left over after you take out 1,500-foot setbacks from 7 homes. On the right, I have the same map that would 8 apply to a half mile. It shows that very little of 9 the state is left if you apply a half-mile setback. 10 With that, I thank you. And, again, 11 thank you for coming tonight. I look forward to the 12 questions and -- yeah, thank you for coming. 13 MR. HARTMAN: Thank you. 14 As I mentioned earlier, there are two 15 permitting processes involved. One is called a 16 certificate of need, and part of that is a 17 requirement for an environmental report, which is 18 basically why we're here tonight for scoping on 19 that. You know, obviously, we'll take questions on 20 the need process. 2.1 We also have a parallel site permit 22 process. The way the Office of Energy Security is 23 set up, there are different staffs within the I happen to work in the Energy Facility 25 Permitting staff, and in that section we do

Page 14 1 permitting for power plants, transmission lines, pipelines, as well as wind farms. Also -- and 3 typically, we're involved on the permitting side. When it comes to a certificate of need, 5 there are other people within the Office of Energy Security, they're more of an advocacy staff, and 7 they'll formally intervene as parties and take a 8 position on the project whether they think it's 9 needed on or not based on a number of factors. 10 Our relationship with them 11 is responsibility -- excuse me -- to prepare the 12 environmental report. We are not involved with the 13 details of the need process, per se. So I just 14 wanted to kind of make that distinction. 15 You know, when we talk, I don't get a lot 16 of information from them about details on the need 17 side. On the other hand, I need to be there for 18 what my role is. And I guess I forgot to mention 19 earlier, I am the project manager for this on behalf 20 of the Office of Energy Security on the permitting 2.1 side. 22 The Public Utilities Commission is the 23 decisionmaker. Our staff is a different agency and 24 we report to the PUC, and they'll make the ultimate 25 decision on that.

Page 15 1 You'll have to excuse me, my voice is probably not great anyhow, it's probably a little 3 worse tonight than it normally is. Please bear with 4 me anyhow, as far as that goes. If at any point you 5 can't hear me, stick a hand up in the air, so I know that I'm not speaking loud enough and I'll try to 7 speak a little bit louder. 8 UNIDENTIFIED: We can't hear you very 9 good. 10 MR. HARTMAN: Is this better? 11 UNIDENTIFIED: Yes. 12 MR. HARTMAN: I was going to say you 13 could sit closer to me if you wanted to. 14 But maybe when we get to questions we can 15 touch on a few other things. I know that there's 16 been a lot of interest in this project, both with 17 the Commission during the application acceptance as 18 well as on our open docket on the general permit 19 standards, and we are certainly aware of those 20 concerns. 2.1 I guess we're here tonight to 22 specifically hear people's comments with regard to 23 what should be in the environmental report. 24 add this is not the only time we're going to be 25 here, and I might add that I know I had a couple of

Page 16 criticisms for holding the meeting here, originally 1 in the cafeteria, anticipating a larger crowd size I 3 moved it here. The choice of the meeting locations is based on what was available within the time frame 5 we're looking for meetings. 6 If anybody has additional suggestions in 7 the future about where meetings could be held, 8 please let me know and I'll certainly take that into consideration the next time we schedule meetings. 10 We'll be back here someplace for future meetings 11 related to the project, either on the site permit 12 and/or the certificate the need. 13 I might add that when the Public 14 Utilities Commission accepts a certificate of need, 1.5 basically it doesn't come back before the Commission 16 on the need side until the administrative law judge 17 provides his report or recommendations to the 18 Commission. And the Commission staff is --19 typically they don't attend these meetings. 20 don't necessarily have a speaking role unless there 2.1 are questions specific to process and certainly 22 we'll have to refer to Mr. Eknes over here 23 (indicating) as far as that goes. 24 As I mentioned earlier, going back to 25 last year and, as many of you know, we asked the

Page 17 1 Minnesota Department of Health to prepare a report on the health -- or potential health effects of wind 3 farms. There's a gentleman over there (indicating) 4 that has copies of report at his table. And one of 5 the authors of that report, Carl, is here, and if there are questions about that he'll certainly try 7 to answer those tonight, also. 8 Before we maybe turn our attention to 9 your comments, I'd like to perhaps make a small 10 segue and maybe just ask a question or two. 11 question is, what do you think wind is? Any answers 12 out there? Wind is defined as moving air with mass 13 and energy. 14 You know, I've been doing this for, I 15 quess, a fairly lengthy period of time and I've had 16 the opportunity to come across some literature 17 regarding that, and it looks at it from a somewhat 18 different perspective. I think before we get into 19 the details of what your concerns are, I'd like to 20 provide a little perspective on that from two 2.1 authors. 22 One is a Scottish anthropologist whose 23 name is James Frazer. And Mr. Frazer wrote: 24 the natural phenomena, there are none -- perhaps 25 none which civilized man feels himself more

Page 18 1 powerless to influence than the wind. Of all the natural forces, wind is the most enigmatic. 3 start, it is invisible, it has no shape, size, smell, taste, or sound of its own. Wind is elusive, 5 shifty, figurative, difficult to define, and impossible to ignore. 7 There's another short passage I'd like to 8 read, perhaps a bit longer. And this was, I quess, to capture the essence of what wind is in a much 10 larger perspective. I'd like to read from the 11 introduction of a book by Lyall Watson titled 12 Heaven's Breath, The Natural History of Wind, 13 published 1984. The book is now out of print, but 14 it makes for a fascinating read. 15 And in the introduction he says: 16 are worlds without wind, breathless ones that shine 17 with a hard, diamond-bright reflected light, ones 18 like Mercury and the moon that are too hot or too 19 cold, too small or too old to sustain an atmosphere. 20 Without the wind, most of our Earth would 2.1 be uninhabitable. The Tropics would grow so 22 unbearably hot that nothing could live there and the 23 rest of the planet would freeze. Moisture, if any existed, would be confined to the oceans and all but 25 the fringe of the great continents along the narrow

Page 19 1 temperate belt, there would be nothing but desert, there would no erosion, no soil, and for any 3 community that managed to evolve despite these rigors, no relief from suffocation by their own 5 waste products. 6 But with the wind, Earth comes truly 7 Wind provides the circulatory and nervous alive. 8 systems of the planet, sharing our energy and information, distributing both warmth and awareness, 10 making something out of nothing. 11 All wind's properties are borrowed. 12 knowledge of it comes at secondhand, but it comes 13 strongly. And this of -- a force that cannot be 14 apprehended, but nevertheless has an undeniable 15 existence, our first experience with the spiritual. 16 A crack in the cosmos that widened to let the tide 17 of consciousness flow through. We are the fruits of 18 the wind, and have been seeded, irrigated, and 19 cultivated by its craft. 20 Approximately two percent of all radiant 2.1 energy that falls as sunlight on the Earth is 22 converted to kinetic energy, wind. There's enough 23 power in circulation in the wind at any time, day or 24 night, to provide for all of the world's energy 25 needs. But the problem is that it is so thinly

Page 20 1 distributed. To have it as a resource all we need to do is slow it down -- slow part of it down and 3 the energy lost is then gained by the wind energy 4 that's standing in its way. 5 So I guess that could be the seque to 6 what comments or questions you might have tonight. 7 I don't have -- before we start on that, I'll turn 8 our attention -- I have kind of an agenda sheet here tonight. We've already gone through the 10 introductions and the applicant's proposal. 11 Again, we've briefly covered the 12 certificate of need and the site permit. Again, 13 those are run independent of each other in terms of 14 the permitting process. They're kind of like two 15 railroads running on separate tracks, they're going 16 along hand in hand, and where we cross over -- for 17 example, for our staff to provide the environmental 18 report. We prepare that after this meeting, after 19 the comments come in, the scoping is done, and that 20 is then provided to the ALJ for the certificate of 21 need proceeding. And the permit process continues 22 to run beyond that and develop its own record. 23 again, as I mentioned earlier, we'll be here for 24 that. 25 In the handout, the colored one, there's

Page 21 1 a map that talks about the informal certificate of Excuse me. And I believe that's need process. 3 fairly self-explanatory. At this juncture, the 4 certificate of need has been accepted. The initial 5 comment period is February 12th and the reply period 6 ends on March 12th, which is not to be confused with 7 the date for submitting comments on this. Excuse 8 me. 9 Again, on the informal need process --10 and I just might mention there has been a request 11 for a contested case hearing on this proceeding, and 12 the Commission will make that determination as to 13 which process to follow. So far, it's an informal 14 certificate of need process. 15 There's a difference in heading for the 16 formal need process, which is longer, and that 17 basically involves participation by parties in that 18 proceeding and is somewhat different. Mr. Eknes can 19 certainly address that here tonight if there are any 20 questions about that. We do have a handout that 2.1 would be available later on if there are questions 22 about that also. 23 With regards to the site permit process, 24 the application was submitted, as the National Wind 25 representative indicated earlier. That application

Page 22 1 was accepted late last year, notice was put out, comments were received on the adequacy of the 3 application. In other words, is it complete, is all the information there, as well as topics that should 5 be considered in the site permit. 6 A number of those -- a number of people 7 did send letters and comments, and those will also 8 be addressed in the scoping document as necessary or where appropriate. Another step would be the 10 Commission makes a determination to issue a draft 11 site permit. And if a draft site permit is issued, 12 we'd be back then for another meeting or a hearing 13 combination, possibly. Again, that will probably be 14 presided over by an administrative law judge and 15 held concurrently with the certificate of need 16 hearing. 17 The record will then remain open for a 18 number of days as set by the hearing examiner. 19 then when the ALJ -- and the administrative hearing 20 examiner is with the Office of Administrative 21 Hearings, an independent agency that provides 22 administrative law judges for state agencies in 23 contested matters or administrative review 24 procedures. 25 Once the ALJ would submit his record back

Page 23 1 to the Commission, the Commission would then make a determination on need for the project. If the 3 certificate of need is not granted, then we have no 4 site permit to issue. If the certificate of need is 5 granted, a permit issuance will more than likely follow after that, then. 7 I lost my place. 8 Now, again, as I mentioned earlier 9 tonight, the comment sheets can be submitted through 10 March 26th. Our fax number is here (indicating), 11 you can also submit online -- comments online or at 12 tonight's meeting. And those comments can be 13 addressed to me. My name and address and e-mail is 14 there. We do not take comments over the phone, it 15 has to be in writing. 16 If you're looking for additional 17 information on the project as the record develops, 18 it indicates we have information on our website, 19 energyfacilities PUC.state.mn.us. No point in 20 reading it because it's in front of you, you don't 21 need to write it down. We'll post a lot of our 22 stuff there. 23 We also have everything in the record 24 that's in the eDocket proceeding, and there are two 25 sites for that. For the certificate of need, you

Page 24 1 enter -- there's a certificate of need docket, that number is 09-1186, and the site permit is 08-1233. 3 And a complete record of everything in the proceeding would be available there. 5 I quess before we start on the comments, we have some ground rules here. It will be one 7 speaker at a time tonight. As you've noticed, we 8 have a court reporter here, Christine, sitting on my She can do about 160 words a minute, I can't 10 talk that fast. So, for her purposes, please speak 11 clearly when you make your -- speak. Please spell 12 your name for the court reporter also so she can 13 hear -- so she knows how to spell your name as well 14 as be able to take down what you say. 15 We'd like to -- I guess we'd like to ask 16 you to keep your initial comments to five minutes. 17 There'll be additional time to ask additional 18 questions once we've gone through all the cards. Ιt 19 doesn't look like I have that many. So, again, 20 please state your name, spell your name for the 21 court reporter, and please direct your comments to 22 the environmental report or the certificate of need. 23 Now, Ray, the public advisor, has a 24 microphone. So if I call out his name -- excuse me, 25 his name, your name, please raise your hand and he

Page 25 1 will bring the microphone to you. And I'll try to answer the questions if they're directed to me or 3 direct them to the appropriate person. 4 And, having said that, let's get your 5 The first person would be Mark R-A-C-H-A-C. 7 MR. RACHAC: Thanks, Ray. Mark Rachac, 8 R-A-C-H-A-C. I have a small farm in Belle Creek 9 Township. And I've read the report that came in 10 It was 214 pages, I got through most that CD-ROM. 11 of it. I have a few questions. 12 Is this okay? Okay. I'll get a little 13 closer. 14 On page 12, it refers to the projected 15 annual output. And I heard the number on the 16 PowerPoint, 78 megawatts, and then the projected 17 output in the booklet was 230 million to 270 million 18 kilowatt hours. And what I'd like to know is, how 19 does it equate to actual revenue that's going to 20 come into the project? 2.1 And I'm going to get to that, why I'm 22 asking my question, in a minute. And then it also 23 talks about projected. Aren't there enough wind farms around the state already where we could 25 actually have real data, actual data that's already

Page 26 1 from projects that are already underway? 2 And I'll give you another example from an 3 experience today. I was in Dexter and Adams, and I 4 drove by dozens of these things and not one was 5 moving. It occurred to me that, you know, it's a 6 calm day, obviously. And in the report, by the way, 7 it also mentions on page 6 that the highest activity 8 of wind in this area is at night. And so I'm curious if the -- that power that gets generated off 10 peak, if somehow that's useable or not. I'm curious 11 about that, too. 12 And then back to the finance or the 13 revenue coming in, on page 20 it talks about each 14 unit costing approximately 2.3 million, operating 15 expenses 4 to 5 million, a 25-year projected life 16 for these units, so that's at least \$100 million in 17 operation over that period. 18 Account for a little inflation and the 19 like and you're up to over \$300 million for the 20 project, and I'd like to know if there's actually 21 revenue that's going to come in that's going to 22 cover just the infrastructure costs and the 23 operating costs of the project? Where the profits 24 come from, where the taxes come from, and those 25 numbers -- I'd like to see a connection to those

Page 27 1 numbers, and I'm wondering if they exist in any reports or any data that's available to us. 3 And one final -- I'll leave you with one 4 final thought. I'm going to read from the report. 5 On page 30 it talks about the impact -- the visual 6 impact of these things, it says wind farms may 7 appear industrial to some; however, the turbines 8 function to farm the wind for energy. It can be 9 argued that seeing turbines from a natural area may 10 detract from that experience. However, the same is 11 true of other human habitation or structures in the 12 project area and the presence of turbines may be 13 less intrusive than these human activities. 14 These things are 400 feet high and my 15 house is maybe 20 feet high. So I think there's a 16 little disconnect in the logic of the report and I 17 just want to bring that to everybody's attention. 18 And I thank you for your time. 19 MR. HARTMAN: Thank you. 20 I could perhaps respond to a couple of 2.1 the points you raised. One was on production. 22 kind of looking at the -- there are probably about 23 1,800 megawatts of wind in the state. Now, given 24 the legislative mandate or renewable portfolio 25 standard of 20 percent -- 25 percent by 2025, other

Page 28 1 people in the Department of Commerce -- kind of on the other side from where we are -- have looked at 3 long-term electrical growth projections assuming 4 electrical growth at three different intervals, half 5 a percent, one percent, and one and a half percent between now and then. 7 Based on those load growth scenarios, and 8 things do change, if you look at those that would probably indicate in Minnesota -- the utilities in 10 Minnesota to meet that standard might have to build 11 another five to eight thousand megawatts of wind 12 energy facilities, either in the state or in other 13 states. 14 MR. RACHAC: Does it actually pay for 15 Real quickly, the question that I really 16 should have gotten to to get to the point, does it 17 actually pay for itself and does the money, the 18 hundreds of millions of dollars that it takes to 19 build these things, where does that come from? 20 it come from tax revenue, general fund tax revenue? 21 Does it come from higher utility rates because Xcel 22 has to buy this stuff? 23 Those -- I don't -- you know, from a 24 business model standpoint, I don't know how you 25 build -- spend \$300 million on a plant. And by the

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Page 29
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          way, if you built it on a -- you know, I'll say the
          dirty word, clean coal. I lived for 19 years
 3
          four miles from an Xcel plant, it was a coal-fired
 4
          plant, and I haven't missed a day of work in over
 5
          ten years. I think I'm pretty healthy, so I don't
          buy into the, you know, it's pollution that's the
 7
          problem here.
 8
                     But if I put up a $300 million gas-fired
 9
          power plant, wouldn't that be a lot more efficient
10
          and wouldn't it be more profitable? So I'm really
11
          curious where the money comes from to build these
12
          projects. And I'm concerned about that, because I
13
          think it results in higher taxes or certainly higher
14
          utility rates. Thank you.
15
                     MR. HARTMAN:
                                   Thank you.
16
                     Did National want to respond to any of
17
         his points at all?
18
                     MR. PELSTRING: I'm Pat Pelstring with
19
          National Wind. First let me address your --
20
                     MR. HARTMAN:
                                   Speak up.
2.1
                     MR. PELSTRING: Hello? Is that better?
22
                     UNIDENTIFIED: Yeah.
23
                     MR. PELSTRING: All right. Let me
          address the night power issue. Xcel is probably one
25
          of the best utilities in the country. I think
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Page 30 1 they've got more wind energy in their system in Minnesota and Colorado and Nebraska -- New Mexico, 3 and they are really quite adept at moving up with their power sources some and dropping some of them 5 down. Contracts with Xcel, they take all the power we produce at a fixed price. 7 And in terms of financing, these are 8 privately financed. There's a ready list of lenders, and in this case we're going to be using 10 Minnesota banks that will be financing this project. 11 So the money that -- they certainly make 12 money, and the money that's brought in is privately 13 brought in and predominantly Minnesota. 14 MR. HARTMAN: Next person with a question 15 would be Larry Fox -- excuse me -- Larry Fox. 16 MR. FOX: Larry Fox, L-A-R-R-Y, F-O-X. 17 live in Belle Creek also. I grew up in Vasa, went 18 to Living (phonetic) High School, very active in FFA 19 and all the various judging teams. I went to the 20 University of Minnesota with the ag school, 21 graduated in '66, moved into Belle Creek then. My 22 first job was selling Moormans Feed to farmers 23 directly. 24 And in the meantime I developed my own 25 business of Fox Aq, manufacturing and distributing

Page 31 1 hog equipment, and I've done that for over 40 some And I own a 3.82-acre homestead out there. 3 And to the northwest of me, I have a hog finishing unit; when the northwest wind blows, naturally I 5 smell pig, but I don't complain. To the east of me 6 I've got corn dryers. I hear them every night. 7 fact, last week he had the fan running, I could hear 8 that fan very loud. I didn't complain. I just 9 adapt and know that this is a farming community. 10 And I believe that a farmer should have 11 the right to kind of choose how he wants to operate 12 and create the revenue off these wind towers. Ιt 13 should be kind of his choice. I'm all for it. 14 The revenue that they're receiving and 15 the amount of money that goes to the state and 16 township, out of 300,000, it goes -- it's 17 appropriated for county, 20 percent of that goes to 18 our township, which is quite a nice revenue. 19 can fix their bridges and do their roads. 20 For me personally, they offered me 30,000 2.1 over a 20-year period for my home site. 22 averaged about 1,500 a year. Hey, that pays my 23 insurance or half of my real estate taxes. 24 quite beneficial. Just think what that does to the 25 whole community when you've 52 wind towers from

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Page 32
1
          Goodhue Wind, Geronimo is supposed to have 38, ten
          more coming in, I suppose, up around Kenyon.
 3
          There's 100 units, you can figure out that's a
          tremendous amount of revenue for these small
 5
          communities like Kenyon, Goodhue, Zumbrota,
 6
          Wanamingo, that's a tremendous influx of revenue
 7
          which creates -- it's good for the businesses and
 8
          the community. I think it's a revenue that
 9
          outweighs a lot of -- a lot of factors here.
10
                     Thank you.
11
                     MR. HARTMAN:
                                   Thank you.
12
                     Next speaker would be Sara, I can't tell
13
          if it's an H or L, Linker-Nord.
14
                     MS. LINKER-NORD: Good evening.
                                                      My name
15
          is Sara Linker-Nord, S-A-R-A, L-I-N-K-E-R, N-O-R-D.
16
                     I live in Minneola Township. We have
17
          land in the footprints. And I just want to state
18
          some of a letter I have written that I'm going to
19
          submit.
20
                     I've been an enthusiastic proponent of
21
          wind energy ever since I saw the thousands of
22
          turbines in the Palm Springs area several years ago.
23
          I find them to be aesthetically pleasing, graceful,
          and majestic. I also see them as tangible evidence
25
          that America is serious about taking care of itself
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Page 33
1
          to improve our lives for now and for the future.
                     When I first heard that there was
 3
          interest in harnessing the wind in Goodhue County, I
          was thrilled. In fact, I naively thought everyone
 5
          would be. I have listed some of the reasons of my
          interest and excitement for pushing wind energy
 7
          forward.
 8
                     It decreases our carbon footprint, it is
 9
          renewable, it is clean. It will create jobs, it
10
          will employ local contractors during construction.
11
          It will create revenue for our schools and local
12
          businesses. It gives farmers another crop with
13
          little land loss.
14
                     The infrastructure is here. Minnesota is
15
          mandated to implement alternative energy sources by
16
          2025. Alternative energy created on American soil
17
          increases our energy independence. And finally,
18
          wind energy complements other sources of energy such
19
          as solar, geothermal, domestic oil, and even
20
          nuclear.
2.1
                     Thank you.
22
                     MR. HARTMAN: Thank you.
23
                     Craig Nord. Would this be the better
          half, or other half?
25
                                That was my wife. My name is
                     MR. NORD:
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Page 34 1 Craig Nord, C-R-A-I-G, N-O-R-D, and yes, I live in the footprint at the same address as my dear wife. 3 First of all, I'd like to say it's so 4 encouraging to see so many familiar faces here, 5 whether it be our neighbors, our local government officials from our towns that are adjacent to this 7 proposed project, our township board officials, and 8 our soil and water conservation district people, to 9 name a few. 10 Also, I'd like to add that, yes, 11 value-added agriculture in Goodhue County. We've 12 been at it a long time with meat production, milk 13 production, ethanol production, just to name a few. 14 And if I may go a little more specific on what the 15 future may be, it's one comment that was made 16 earlier about what to do with off-peak electricity 17 that is generated at night or whenever demand may be 18 lower than production capability, it's my 19 understanding that the Minnesota Corn Growers 20 Research and Promotion Council is currently -- has a 21 research project going on how to make nitrogen 22 fertilizer out of off-peak electricity. 23 Thank you. 24 MR. HARTMAN: Thank you. 25 Next speaker, Marty, K-E-H-R-E-R (sic), I

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Page 35 1 believe. MR. KEHREM: Marty Kehrem. You could 3 have tried torturing that, I don't care. M-A-R-T-Y, K-E-H-R-E-M. I live and farm in Goodhue County. 5 I'm on the advisory board of Goodhue Wind and I 6 consider Goodhue to be my hometown. And I'm also 7 one of the initial investors in the wind project. 8 A few things I'd like to cover. 9 know, what other businesses are coming to town? 10 What other project would bring 180 million of 11 construction activity to the area? Where else are 12 you going to add jobs, and how would you add over 26 13 million to the local economy? 14 I feel the people that are against this 1.5 are hurting small farms. It's tough enough with 16 high seed costs and fertilizer costs and low dairy 17 prices. This is adding revenue to the farmers. 18 Would you rather have the neighbor's farm sold to a 19 big corporate farm? Or would you rather have that 20 farm turned into housing? 2.1 Farmers' property rights should be 22 considered. I mean, why would a -- why should a 23 farmer ever sell off a housing site and then the next day the new neighbor wants to tell me how I can 25 or what I can't do with my land and how to run my

Page 36 1 business. I mean, what would be beat out next? 3 Some of the people that own small acreages in the country, they want the farmer to be invisible and 5 silent. Now, what's next? That's -- one of my 6 biggest concerns would be my corn dryer because they 7 can hear it, the combine because they can hear it or 8 because it's making too much dust, or the truck because they can hear it, or the grain bins, them 10 fans are running a lot and they make noise. 11 And the health impacts, I mean, if it's 12 true that the small noise from the wind turbines 13 cause illness, well, then highways, airports, train 14 tracks, everybody that can hear them would be sick. 15 Those things create much more sound and infrasound 16 than a windmill. 17 In closing, I'd just like to state that I 18 live next to a very large hog farm where I can hear 19 their pit fans run 24/7. And you said that wind has 20 no smell, I could prove that wrong sometimes. 2.1 do I say I like it? No, I don't say that. Do I say 22 I don't like it? I don't say that, either. 23 See, it's their land, they bought it, 24 paid for it, I've learned to live with it. And this 25 hog farm is now a part of our neighborhood and my

Page 37 1 family and my neighbors, we've welcomed them into our neighborhood. We've accepted it. 3 MR. HARTMAN: Thank you, Marty. 4 It was kind of a joke I heard when I was 5 in northern Minnesota and talked to a couple of 6 older gentlemen, the guy said I love farming so much 7 if I had a million dollars, I'd spend it all 8 farming. The next speaker would be Corky 10 Buckingham. 11 MR. BUCKINGHAM: Corky Buckingham, 12 C-O-R-K-Y, B-U-C-K-I-N-G-H-A-M. And I am also on 13 the advisory board -- an advisory board member for 14 Goodhue Wind. I came on and joined in -- at the 15 startup in 2008. 16 What I'd like to bring to the attention 17 here, and Chuck Burdick did in his presentation of 18 the job creation of a project of this magnitude, and 19 that is in these two communities of Zumbrota and 20 Goodhue, there are 54 businesses basically on Main 2.1 Street. And in this economic downturn, many small 22 businesses, as I think we are all aware of, are 23 struggling and concerned that they can stay in 24 business while awaiting for a turnaround in the 25 economy.

	Page 38
1	Income from the construction of the
2	Goodhue Wind project will help sustain and provide
3	additional business income to Main Street. And I
4	think that's fundamental, very important to all of
5	us that live here, whether its this community of
6	Mazeppa or Zumbrota or I live in West Concord.
7	So thank you.
8	MR. HARTMAN: Thank you.
9	The next speak would be Rochelle Nygaard.
10	MS. NYGAARD: Rochelle Nygaard,
11	R-O-C-H-E-L-L-E, Nygaard, N-Y-G-A-A-R-D.
12	Denmark, the county most known for its
13	windmills, accepts that there will be property value
14	loss near wind farms and has a financial
15	compensation system. I believe property owners here
16	are reasonable to expect similar compensation.
17	Can you guarantee in writing I will not
18	have lost property value? What is being done to
19	address this, to minimize the loss of value? One
20	half mile or more setbacks from nonparticipating
21	landowner boundaries is reasonable, and I would ask
22	for a moratorium until a solution to all the
23	problems are successfully agreed upon.
24	MR. HARTMAN: Thank you, Rochelle.
25	Next speaker would be Judy O'Reilly.

Page 39 1 MS. O'REILLY: Judy, J-U-D-Y, O'Reilly, O, apostrophe, R-E-I-L-L-Y. I live in Belle Creek 3 and we have miles and miles of state-funded recreational snowmobile trails. They run through 5 our beautiful valley. These trails connect to several of the small towns in the surrounding areas. 7 These trails are noted for their beauty 8 and their accessibility. They are used not only by locals, but people throughout the state of 10 Minnesota. Many, many effort hours and revenue are 11 committed to sustain and maintain these trails. 12 Because of these trails, the recreation draw for the 13 community, the small towns, restaurants, the gas 14 stations, the bars, the repair shops, and the sales 1.5 of the snowmobiles reap in the monetary rewards when 16 the snowmobiles ride these trails, not to mention 17 the enjoyment, the pleasure, and the beauty that is 18 provided to so many people. 19 We would assume that some of these 20 locations where the wind turbines will be erected 2.1 will interfere with portions of these trails because 22 of the landowners who have signed their rights away 23 to the wind turbine companies no longer can -- can 24 no longer give access. 25 Can the trails still continue across this

	Page 40
1	land or is there a plan to help divert these trails
2	or will these trails become a dead end?
3	Thank you.
4	MR. HARTMAN: National Wind, would you
5	like to respond to that? I don't know what the
6	terms of your easement agreements are.
7	MR. BURDICK: Thanks. I know that
8	snowmobiling is a near and dear activity to many
9	people. Corky and I were having a conversation not
10	so long ago about him using those very trails and
11	enjoying them. I think it's an important resource
12	for the area and we definitely want to respect it.
13	MR. HARTMAN: Next speaker is
14	Chuck, could you maybe go into that a
15	little more, please? I think they'd like an answer.
16	MR. BURDICK: There's no specific
17	provision in the lease to treat the snowmobile
18	trails, but it's obviously not something that we
19	have the intention of disrupting.
20	I don't know if that answers people's
21	questions.
22	UNIDENTIFIED: Do you got it in writing
23	or what?
24	MR. BURDICK: We do not
25	UNIDENTIFIED: You can't have a yes or I

```
Page 41
 1
          don't know. Either you've got it in there or you
          don't.
 3
                     MR. BURDICK: We'll keep the trails.
 4
                     MR. HARTMAN:
                                   Thank you.
 5
                     Next speaker, Edward McNamara.
 6
                     MR. EDWARD McNAMARA: Edward,
 7
          E-D-W-A-R-D, M-C-N-A-M-A-R-A. On behalf of the soil
 8
          and water conservation district, I'd like to bring a
          few points of our concerns.
10
                     The first concern that we have would be
11
          the construction site erosion and the sedimentation
12
          effect on the local streams and watershed, it's
13
          something that's not to be taken lightly.
14
                     Another concern is the surface water
15
          diverted from the construction site and the
16
          impermeable surfaces of the access roads are going
17
          to add to the divinity that is limiting the
18
          watersheds and the water quality that we have.
19
                     We're concerned about the impact on the
20
          soil productivity during the construction time and
2.1
          the time period after construction. And last
22
          concern is the compaction on the fields and the
23
          wetlands from the operation of the heavy equipment
          during the construction.
25
                     We would like to have those addressed in
```

	Page 42
1	the environmental docket.
2	Thank you.
3	MR. HARTMAN: Thank you.
4	The next person must be taking a break
5	from FOX News tonight, Bill O'Reilly.
6	MR. O'REILLY: Bill O'Reilly, but I was
7	born and raised in Goodhue, Minnesota. And I do
8	have something in common with Bill O'Reilly, the one
9	on TV, we both were school teachers. But he went on
10	to bigger things.
11	B-I-L-L, O, apostrophe, R-E-I-L-L-Y. I'm
12	talking about something different that hasn't been
13	brought up.
14	In the United States there are about 100
15	nuclear power plants, exactly 102. 16 are
16	decommissioned. To my knowledge, and I've worked on
17	this, no 410-foot industrial wind turbines are
18	placed as close to a nuclear plant as those proposed
19	by National Wind. The reason for keeping distance
20	between large industrial turbines and the nuclear
21	plant is national security.
22	Radar clutter caused by the blades makes
23	it virtually impossible to detect objects flying.
24	From my research, 72 kilometers, 45 miles, is used
25	in Europe. In the United States, no setbacks are

Page 43 1 required that I know about. I contacted the DOT, the Department of 3 Defense, the FAA, the Nuclear Regulatory Commission, Homeland Security, state representatives and the 5 The only response received was from the NRC. 6 And it reads in part -- I have it here, I have the 7 e-mail, anybody can look at it. And here's part of 8 their answer: Due to the nature of the security-related issue associated with your concern 10 and to ensure that we are not unnecessarily 11 releasing information that would reveal any 12 potential security vulnerability, we are unable to 13 provide you with specific details regarding the 14 NRC's evaluation of your concerns. 15 The e-mail was written by Victoria 16 Milling (phonetic), you can look her up on the 17 Internet. So I ask you here tonight to personally 18 use your computers, research this concern. And then 19 ask the proposers of the turbines if they are going 20 to complete Form 7460-1 that the FAA requires. 2.1 if the towers come to be, will they have stealthy 22 material blades and will the developers provide 23 advanced digital tracker programs for the Farmington 24 radar station? 25 Thank you.

```
Page 44
 1
                     MR. HARTMAN: Thank you.
 2
                     I'll perhaps take a quick shot at
 3
          offering an answer. I know that in Canada, Ontario
 4
          Hydro has one or two wind turbines and one of their
 5
          nuclear facilities right on the same site. Homeland
 6
          Security has been involved in reviewing some of the
 7
          wind facilities in Minnesota. Out on Buffalo Ridge,
 8
          there used to be an Air Force base out there that's
          been decommissioned. And it was an issue out there,
10
          it was cleared and resolved and moved forward.
11
                     I know it's been more of an issue in
12
          England, per se. It hasn't been an issue. I also
13
          might indicate the Minnesota Department of
14
          Aeronautics locates wind turbines on -- for pilots
15
          also. So, you know, the locations are made
16
          available.
17
                     It doesn't answer your question about
18
          interference with radar, it's something we look into
19
          -- we'll look into. So thank you for your comment.
20
                     MR. O'REILLY: I have a little follow-up.
2.1
          7460-1, will that form be required of the
22
          developers?
23
                     MR. HARTMAN: I don't recall what form
24
          7460 is.
25
                     MR. O'REILLY: Well, I'll tell you what
```

```
Page 45
 1
                  I have a copy here and I'll give it to you
          tonight.
 3
                     MR. HARTMAN:
                                    Okay.
 4
                     MR. O'REILLY: But that form, for those
 5
          of you that are here, requires that the wind
          developers put these exact spots in so that the
 7
          radar, when they use radars, like a GPS system on a
 8
          tractor, whatever, a car, they know where they are.
          So when they get that clutter on their screen
10
          they'll know what they'll dealing with and they
11
          won't get it if they put the stealthy cover on the
12
          blades.
13
                     MR. HARTMAN:
                                    If that's the form that I
14
          think it is, all wind developers fill that form out.
15
          They have to for everything above 200 feet.
16
                     MR. O'REILLY: Right. I haven't heard
17
          anybody -- I haven't seen any filled out. Will they
18
          be filled out before they're built?
19
                     MR. HARTMAN:
                                    They --
20
                     MR. PELSTRING:
                                      Yes.
2.1
                     MR. BURDICK: Yes.
22
                     MR. HARTMAN:
                                   Yes, they will, and then if
23
          anything is changed they have to go back and amend
          it so they have the final latitude and longitude
25
                        And they also report those to us and
          coordinates.
```

Page 46 1 we put them into a database we're trying to establish also for mapping purposes. 3 So yes, it's something that's routinely 4 looked at. And also our Minnesota Department of 5 Aeronautics comments on those and if municipal 6 airports or local airports are involved also, and 7 Homeland Security also reviews those also through 8 the FAA. MR. O'REILLY: Well, I would hope that 10 would be done. Because from Minneola -- from 11 Highway 52 all the way to Vasa, and we're not very 12 many miles away from the nuclear power plant. 13 thank you for making sure those forms are filled 14 out. 15 MR. HARTMAN: Thank you. 16 The next speaker, Erin Logan. 17 MS. LOGAN: Thank you. I'm Erin Logan, 18 and I live in Minneola Township. I have a handful 19 of questions. But first, I'd like to respectfully 20 disagree with a few of the facts that were stated in 2.1 the original PowerPoint presentation. 22 I do appreciate that Goodhue Wind is 23 doing a voluntary 1,500-foot setback. That is three 24 times one of the state requirements for setbacks. 25 It does not cover all. We are all entitled to

Page 47 1 something called wind rights, and that requires that the wind company keep the wind turbines a certain 3 distance from our property lines. Those setbacks are much greater than the 500 feet. So as it may 5 sound like they're giving you a real good deal, they're not. 7 In addition to that, the decibel level 8 reduction by doubling the distance does not result in a net loss of ten decibels, it would result in a 10 net loss of six decibels. So I feel the numbers 11 that are presented are inaccurate. 12 I have a question for the OES. 13 each wind farm in the state of Minnesota is required 14 to provide to you their monthly production, I would 15 like to know what the average net capacity factor 16 for wind turbines are in southeastern Minnesota, 17 because this is a direct relation to the revenue 18 that is being told to us that's going to be provided 19 to our local government. 20 MR. KIRSCH: Thank you. 2.1 MR. HARTMAN: With regard to your 22 question on capacity factor, it's generally in 23 the -- you know, there are estimates and then 24 there's reality. Sometimes they coincide. 25 example, last year was a poor wind year across

Page 48 1 Minnesota, in general. When they start off on these projects and 3 they do an estimate of what the capacity factor is, 4 that's typically between 36 to 39 percent. 5 means 61 percent of the time they aren't at full --6 well, they aren't at capacity. They're below that. 7 When there's no wind, they draw power in order to 8 reduce power then. With regard to the issue of wind rights, 10 if you're a nonparticipating landowner, as they 11 indicated, they're going to be 1,500 feet away. 12 Also, if you're a nonparticipating landowner we have 13 what we call a buffer setback. And that's typically 14 then established at five rotor diameters by three 1.5 rotor diameters. Five is the prevailing wind axis, 16 which is generally northwest, kind of south, 17 southwest. And three rotor diameters on the 18 nonprevailing wind axis, typically kind of northeast 19 to southwest, east to west, in that neighborhood. 20 Yes. 2.1 MS. LOGAN: Can I respond to that? Thank 22 you. So based on the numbers that you're telling 23 me, the setbacks from a property line of the nonparticipant in the predominant wind direction 25 would be 1,400 feet, and in the nonpredominent

Page 49 1 direction would be in the range of 843 feet? It would be a function of MR. HARTMAN: 3 rotor diameter, which is going to vary from turbine 4 to turbine. That's generally what we've had in our 5 permit. For nonparticipating landowners, they've 6 indicated it's going to be 1,500 feet away. 7 assuming that's from the boundary line of all 8 nonparticipating landowners. MS. LOGAN: That would be incorrect. 10 Their 1,500 feet is from a residence and they're 11 saying occupied residential. 12 MR. HARTMAN: Okay. 1,500 feet from a 13 residence then would be five by three from the 14 property line, then, under the existing permit 1.5 standards we have. 16 Next speaker, Gary Luebke, L-U-E-B-K-E. 17 MR. LUEBKE: Okay. My name is Gary 18 Luebke, that's G-A-R-Y, last name is L-U-E-B-K-E. 19 I'm speaking in support of Goodhue Wind 20 this evening. I own a farm in Holden Township, 21 where I grow up and one of my great-grandfathers 22 started farming in 1860. 23 My interest in wind development started 24 several years ago when the opportunity on that farm 25 became available that we could do some developing in

Page 50 1 that area. We had four developers we talked with, and at this point we have -- most of the neighborhood is signed under an option. And that is 3 4 going to be developed in anywhere from three to 5 five years. 6 So what's happened in that neighborhood 7 over the last 140 years? I guess we've had 8 railroads come. We've had varying response to 9 railroads. Some people enjoyed them, others 10 despised them because they cut their farms on an 11 angle. We've had telephones poles and electric 12 poles, we've had barns of all shapes and sizes. 13 And all this development going on is 14 pretty much with an effort to make people's lives 15 easier and to increase their income. 16 strongly about developing this wind resource and 17 I've had an opportunity to participate in the 18 Goodhue Wind Project and I'm very enthusiastic about 19 it since it is a community-based energy development. 20 I'm in the founders group and I'm also on the 2.1 advisory board. 22 This has given me a good perspective to 23 look at wind and the pros and cons that I see. been watching the development and people's reaction 25 to wind in southern Minnesota and throughout Iowa.

Page 51 1 I lived and worked in Mower County for over 15 years and I've gotten to know a lot of the farmers in that 3 And so I have reacquainted myself with them, area. and I'm finding that they are very much welcoming 5 the wind development, they see they have had to surrender a very small commitment for an excellent 7 income. 8 As far as the public sector, Mower County 9 is not able to assess real estate taxes, but they do 10 receive production tax credits. And just a couple 11 weeks ago, I was able to receive kind of a report on 12 what's going on with production tax income in Mower 13 County and the income they received in 2009 was a 14 little over \$861,000. 15 Now, that was assessed during 2008 and 16 all those turbines that some of you have maybe seen, 17 they were not all in production yet. And that was 18 There's quite a little more from 187 turbines. 19 production coming online real soon. 20 A lot of these people that I talked to, 2.1 they don't understand what a big issue we have in 22 other parts of southeast Minnesota. They aren't 23 annoyed by wind turbines. They are, in fact, annoyed by -- and several of them I talked to live 25 near Interstate 90, they say that is an annoyance.

Page 52 1 As far as -- they pretty much -- they think they were about 1,000 foot set back from their 3 residence and they can't understand why there would be a difference in someone in Goodhue County being 5 affected any different than someone in Mower County affected by 1,000 feet. 7 And that's what one individual said, but 8 in response to a previous question, you know, why there's some turbines in Mower County that were not 10 running. Each wind developer sells their power 11 differently, and I know the development developed by 12 enXco right near the city of Dexter, they are a 13 peaking facility. The other facilities down south 14 and east of Grand Meadow, by LeRoy and south into 15 Mitchell and Howard County, they have two different 16 markets for their electricity. So it's very 17 individual how they're going to sell electricity and 18 if they're running or not. 19 Thank you. That's all I have. 20 Thank you, Gary, you MR. HARTMAN: 2.1 forgot the Amoco pipeline is now British Petroleum. 22 In Mower County, in fact, I was down 23 there last week, the wind turbines now pay ten percent of the county budget. It's significant of a 25 level and it's not including what goes to the

```
Page 53
1
          townships. Last year, I believe -- or 2008, the
          state collected -- or passed through to the counties
 3
          $2.1 million. It's an increasing source of revenue
          for a lot of rural counties hosting these facilities
 5
          now. Thank you.
 6
                     The next speaker would be Katherine, I
 7
          don't know if it's an A, Hosman (phonetic)?
 8
                     MS. HUSEMAN: Huseman.
 9
                     MR. HARTMAN: Sorry. It looked like an A
10
          to me.
11
                     MS. HUSEMAN: Katherine Huseman
12
          (phonetic) from Red Wing, Minnesota. I've heard a
13
          lot tonight about the money. Your person from the
14
          wind company says the banks are going to support
15
          this. And who is going to bail out the banks when
16
          they fail? I'm sorry, but somebody eventually pays
17
          for this and that's usually the citizen, the
18
          taxpayer, the one who pays for energy.
19
                     And there's another issue. You talked
20
          about the elusive wind when you started this
21
          tonight. Can anybody describe the smell, the sight,
22
          or anything of a carbon footprint to me?
                                                    That, to
23
          me, is the most fictitious thing we have ever
24
          created.
25
                     MR. KIRSCH: Thank you.
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Page 54
 1
                     MR. HARTMAN:
                                   Thank you. Next speaker,
          Anna Sills.
 3
                     MS. SILLS: Right behind you. My name is
 4
          Anna Sills, and it's A-N-N-A, S-I-L-L-S, and I am
 5
          from Red Wing.
 6
                     Now, Sara Nord mentioned about the wind
 7
          turbines out in Palm Springs, California.
 8
          I've been there too, and I've seen them.
 9
          think they're ugly and they're very noisy.
10
          have an opposite opinion of her in that matter.
11
                     And by the way, my husband did teach at
12
          the Energy Center here in Red Wing before it closed
13
          down, and I'm very familiar with alternative energy.
14
          And I'm all for alternative energy, but I'm not for
15
          alternative energy when it is at the taxpayers'
16
          expense, when they are so big and it's commercial.
17
                     And I'm also concerned about the effect
18
          on the birds, the -- in particular, the bald eagles
19
          and other animals. We know about DDT, or we should
          all know about DDT and the effect that it has had in
20
21
          the bird population and also in regard to the -- is
22
          that too loud -- and also in regard to the bald
23
          eagles.
24
                     We were sold a bill of goods that DDT was
25
          okay.
                 Years down the line, now, it was harmful and
```

Page 55 1 it took a long time before the bald eagle population came around. And so I'm concerned about what is 3 going to be happening to the animals, to the birds, 4 in particular the bald eagle, and I'm wondering how 5 Goodhue Wind is going to be addressing that. 6 MR. HARTMAN: Thank you. 7 Next speaker is Steve Groth. 8 UNIDENTIFIED: Can you answer the 9 question? 10 MR. HARTMAN: Oh, I'm sorry. Well, we'll 11 take a look at that in the environmental report. 12 Going back to the origin of wind energy that's in 13 Minnesota, California, for example -- oh, I'm sorry. 14 Well, I'll give the answer -- the applicant has 15 their consultant here and they can talk about that 16 also. 17 I guess with regard to the first wind 18 energy turbines built in California, a lot of them 19 were up in what's called the Altamonte Pass, which 20 is the -- well, the northwest side of Lawrence 21 Livermore Berkeley -- Berkeley Livermore Labs out 22 there, large, rolling hills out there. 23 A lot of the original turbines were 24 downwind turbines, the RPM on the blades was 25 considerably faster. A lot of the original wind

Page 56 1 turbines were build on lattice towers, so there's a place for perching for the eagles. 3 Carl Thelander, a biologist, has been 4 tagging and studying the eagle population and the 5 effect of wind turbines on the eagle population for probably 20 years now. I talk to Carl occasionally 7 about that. What created a lot of the eagle 8 fatality problem out there is when they built the access roads to the turbines -- now, basically this 10 is uninterrupted landscape, basically open 11 grassland, grazing land -- it created an ecotone. 12 And the ecotone attracted ground squirrels and so 13 they happen to like ground squirrels. 14 building the access roads you created the ground 15 squirrel's population -- it increased dramatically. 16 And then the eagles, rather looking for -- decided 17 to just perch there, it's much easier. So in the 18 downwind turbine, they're going much faster, so they 19 took off and, you know, hit the blades, which led to 20 fatalities. 2.1 Carl has looked at both fatalities as 22 well as mortalities on the population out there. 23 Eagles are also very territorial. There are so many 24 allowed in an area, mature males tend to drive the 25 younger ones out. The population out there, as far

Page 57 1 as I can remember, is stabilized now. A lot of the newer turbines have no places for perching. They're 3 tubular steel towers, considerably higher, but 4 there's virtually no place for them to perch. 5 Now, granted, I don't know what the 6 revolutions per minute was on a lot of the downwind 7 turbines, but those turbines were probably 300 to 8 400 KW. Well, actually a lot smaller than that, I 9 should say. The newer turbines on the GE, for 10 example, your turbine revolution is probably 14 to 11 18 revolutions per minute which probably gives a tip 12 speed about 148 to 160 miles per hour depending on 13 wind speed. 14 There have been other eagle studies done 1.5 that's come up on another project. We have -- I 16 know Fish and Wildlife has some quidelines. They've 17 been revised, they've been out there since 2003. 18 think it's the sixth edition in front of them. 19 Right now, I believe the Fish and 20 Wildlife plans on holding a meeting sometime this 2.1 spring to kind of finalize the guidelines. I know 22 that a lot of wind developers use those guidelines 23 when they lay out and design their projects also. 24 Additional consultation with the 25 Minnesota DNR, I don't know if there's a

Page 58 1 representative from Westwood, would you like to add anything else to that? 3 MR. PETERSON: Thank you. My name is 4 Ronald Peterson, R-O-N-A-L-D, P-E-T-E-R-S-O-N. 5 UNIDENTIFIED: We can't hear you. 6 MR. PETERSON: Can you hear me now? 7 I'm a wildlife biologist with Westwood 8 Professional Services. And the first thing I'd like 9 to explain is that, to date, and I checked on this 10 three weeks ago with a gentleman named Al Manville 11 (phonetic), who's with Fish and Wildlife Service, 12 there's never been a documented strike of a bald 13 eagle from a wind turbine. There have been strikes 14 with golden eagles out West, but no bald eagles so 15 far. 16 The population of breeding bald eagles in 17 Minnesota has increased three times over in the last 18 15 years and there's currently approximately 26 19 times as many as bald eagles in the lower 48 than 20 there were back in the '60s when the problems with 21 DDT became apparent. 22 We are going to be doing some monitoring 23 work this breeding season. We know that there are several eagle nests in the area. We've met with the 25 DNR and the Fish and Wildlife Service and have come

Page 59 1 to agreement on a monitoring protocol. will have an ornithologist out monitoring the flight 3 patterns of the bald eagles as they move from their nests to feeding areas to see what those patterns 5 And if there are adjustments in some turbine locations that need to be made, then we'll certainly 7 be looking at that. 8 I recall also that there were some 9 earlier comments that we saw relating to bald eagles 10 using roadkill as a food source in this area. 11 there was a study in Wisconsin a few years ago where 12 they found that the primary -- the biggest source of 13 mortality in bald eagles from manmade activities is 14 from vehicles hitting them while they're sitting or 15 flying off of roadkills. Of course, we can't 16 predict where the roadkills are going to be, we have 17 no control over that. The solution to that problem 18 is to get the roadkills picked up quickly. 19 MR. HARTMAN: Thank you. 20 Steve, the floor is yours now. 2.1 MR. GROTH: My name is Steve Groth, 22 that's S-T-E-V-E G-R-O-T-H. I live in Belle Creek 23 Township, rural Goodhue. I've had the opportunity 24 for the last 30 years of working on farms in 25 Wisconsin and Iowa. I've met a lot of farmers

Page 60 1 there, and generally farmers are pretty straightforward. And all these wind people here are 3 telling you that these health issues and stuff are really not an issue. And I can't say enough that 5 that's so untrue. 6 I have a bucket load of testimonies to 7 disregard (sic) that whole idea. And these farmers 8 are farmers that have signed contracts, that have turbines and are getting paid for these turbines and 10 they can't even live in their own homes. 11 moving out, they're living in motels, they're living 12 in homes in town. And I can verify that completely. 13 The other side of it is, a couple 14 different issues here I'm talking about, and that is 15 I'm concerned about the health and safety of my 16 family -- my wife and family, and I'm also concerned 17 about the safety and welfare of my neighbors that 18 have signed their contracts. I am. And I'll tell 19 you, when they bury those cables in the soil and 20 they take them across there, these people have never 2.1 really addressed what really goes on underneath the 22 soil. 23 I'd like know from Mr. Chuck Burdick 24 there, how long do these cables last before you have 25 to replace them, and I know how long they last, I've

Page 61 1 checked that out. And I tell you, I've met a lot people here that are working that field and some of the things that they've told me are unbelievably 3 4 scary. 5 And that's why I come here tonight 6 because it's never been addressed properly. They 7 talk about the low frequency noise that affects 8 people in their homes for sleeping and effects like But they've never talked about the high 10 frequency noise, the high frequencies, the ones that 11 you don't hear. The ones that come across the 12 ground and gets in -- back from the turbines and 13 comes -- and these turbines produce dirty 14 electricity. They all do, because they're 15 converting from AC to DC and it creates high 16 frequency. 17 And when it comes back into the soil, 18 when it comes back into your homes, it's silent. 19 And it's very, very, very bad because it works 20 in your body from the inside out and it breaks your 21 immune systems down and it tears you apart. You can 22 find cattle, all that stuff, are affected by it. 23 And just want you to know -- and I'd like 24 Chuck to answer that about the cables in the ground. 25 Because you're dealing with a lot of variables on

Page 62 1 these cables because they have splices in them, and splices are as good as the people that put the 3 splices on the cable, and it's human error. And the different soils they go in, they 5 go in wet soil, they go in rocky soil, are they -how -- who watches this? Who monitors it? 7 mean, who takes care of that? When they put the --8 they backfill these things and they've got those 9 cables in there, I mean, who takes care of that end 10 And who keeps these people accountable? of it? 11 Because I know how it goes. You know, I 12 was in the silo industry for many years. I know how 13 it goes when they're building these things. 14 on a schedule and you get paid by the quicker you 15 get it done, you get bonuses. And you're dealing 16 with a lot of issues here that I'd like to know 17 where the accountability comes from. 18 Is the accountability coming from the 19 Are you guys going to be up there watching 20 it all, doing it? Does it comes from the township, 21 are they going to be out there watching it? 22 comes from the wind company doing it, I'd be a 23 Who's going to keep them guys little scared. accountable? I'd like to know. This is a big issue 25 because the safety and health is involved here. And

Page 63 1 I'll tell you something, the safety and health of people is a priority. Over the thing of money, 3 health and safety is the number one thing, and 4 that's what government is here to protect you for. 5 And when they sidestep that issue, everything falls 6 So I'm asking these guys that. 7 And the other thing is, I'm having a 8 meeting, we're trying to set one up in April, and 9 we're going to discuss this issue on high frequency 10 and things like that. And it will be coming up 11 hopefully in the Goodhue area in April. And this 12 meeting here that we put on, I want to see my 13 Commissioners there, Mr. Bryant and Mr. Samson, I 14 want to see you there on this one, I really do. 15 So, thank you. 16 MR. HARTMAN: Would National like to 17 respond to that at all? 18 MR. BURDICK: I don't know the answer on 19 the electrical cables. We don't have an electrical 20 engineer here tonight, but, OES, if you want to put 2.1 that in your environmental report, I think that's 22 fair game. 23 MR. HARTMAN: Steve, in response to your 24 question, for years the state has inspected every 25 wind turbine. The electrical -- excuse me, the

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Page 64
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          wiring of all the wind turbines is inspected by the
          state Department of Labor and Industry. Actually,
 3
          we have a project going on in Freeborn County
          relatively soon, that county has adopted the state
 5
          building code. There will be also an additional
          state inspection on that.
 7
                     Typically, the problems occur where it
 8
          interconnects with the transformer.
                                                That, again,
          depends on how well the connection is made
10
          initially. It hasn't been, to my knowledge, a
11
          significant problem, but I have seen cases of where
12
          it occurred on one farm that destructed rather
13
          quickly.
14
                     UNIDENTIFIED: What was the last thing
15
          you said?
16
                     MR. HARTMAN: I said if there was an
17
          electrical connection problem that, you know, you
18
          might blow the transformer or something else
19
          happens, so generally that's picked up on the SCADA
20
                   So if there's a fault, the turbine's shut
          system.
21
          down and the problem's corrected.
22
                     The next speaker would be Helen McNamara.
23
                     MS. HELEN McNAMARA: My name is
24
          Helen McNamara. That's H-E-L-E-N, M-C-N-A-M-A-R-A,
25
          and I -- we farm in Belle Creek Township. We have a
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Page 65 1 small farm. I guess I was wondering, Larry, how any 3 problems are reported or, you know, how does one get 4 ahold of -- I think that your office is the one that 5 complaints are supposed to be addressed to? do you determine if there are problems. 7 MR. HARTMAN: Thank you. I'll respond as 8 best as I can. If a site permit is issued, there C are conditions in the permit. One, the permit is 10 distributed to all landowners within the project 11 site. The permit's a rather lengthy document, 12 probably around 28 pages, something like that. 13 have a complaint report procedure in there. 14 something we're looking to improve on a little bit. 15 People can either report complaints directly to us 16 or to the Commission. I should say those might be 17 redirected to me or someone else on our staff. 18 You can also -- if you have complaints 19 with the wind developer, if complaints are filed 20 with them, they are to have a report complaint 2.1 procedure in place. If complaints are filed with 22 them they are to be reported to the Commission on 23 the 15th of every month. 24 And let's say there's some routine 25 complaints -- in fact, I got one a while ago with a

Page 66 transformer problem, if it's a major complaint or 1 something significant, if they're what we call in 3 that category, that should be reported to us in 4 24 hours. 5 MS. HELEN McNAMARA: How long has that been in place? 7 MR. HARTMAN: Since -- well, we've had a 8 complaint procedure in place since -- probably going back to the first permit back in the '90s, '97, '98. 10 And we've modified it recently to kind of put more 11 teeth into it and it's something Ray, Deb, and I 12 have been working on also and continue to work on. 13 When we -- if the Commission issues a 14 draft site permit, that complaint report procedure 15 could be part of that draft permit and people are 16 free to comment on that. We'd like to get feedback 17 as to how we can make that better, more 18 user-friendly. You know, I think we've made some 19 improvements on it in the last couple of years. 20 think we still need to do a few additional things. 2.1 MS. HELEN McNAMARA: So is that pretty 22 clear then as far as -- or pretty evident where 23 they're supposed to do it? I mean, I've talked to at least a couple people who didn't -- well, they 25 didn't notice the -- you know, the papers that would

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Page 67
1
          give that information or they don't recall getting
          it in a different wind project. Is it kind of on
 3
          the back --
 4
                     MR. HARTMAN: You know, we've always had
 5
          it out there.
                        I guess the tricky part is making
 6
          people more aware of it. It's an attachment to the
 7
          permit itself.
 8
                     MS. HELLEN McNAMARA: And that's what you
 9
          have improved on?
10
                     MR. HARTMAN: Yes. Well, we think we
11
          have, we still think there's room for improvement.
12
          So if a draft permit is issued, we'd certainly
13
          appreciate any feedback or comment people would have
14
          about that. We want the process -- we want to
15
          clearly establish what the report complaint
16
          procedures are.
17
                     Just as another example, another thing
18
          we've done recently, if, for example, an applicant
19
          comes in for a permit I might work with one group of
20
          people upfront, once it's permitted and goes to
21
          construction, it might be a different group of
22
          people.
23
                     And then for operational compliance it
24
          might be a different group of people. A lot of
25
          times, things are discussed with the first group of
```

Page 68 1 people, let's say that's group A, that may not be communicated to group B or C. We are trying to 3 close the loops on that, you know, kind of act 4 between the two. 5 For example, we typically have a 6 preconstruction meeting with the developer. 7 to the start of construction, we go through the 8 permit again so everybody knows what the ground rules are, what the terms and the conditions of the 10 permit are. 11 We've added another step and they now --12 excuse me, we now require a preoperation meeting 13 too, because that's a different group of people we 14 may not have worked with. So we're going -- that's 15 one of the areas where, again, permit compliance 16 will come up and will be addressed. 17 So, you know, we have mechanisms in 18 place. Could it be better? Quite frankly, yes. 19 Are we trying to do that? Yes. So, again, we'll 20 continue to tweak that a little bit. And, again, if 21 the draft permit comes out and it's there for you to 22 comment, we'd certainly appreciate your feedback. 23 Before I move on to the next question, 24 our court reporter's been at it for a while. 25 we can take five- or ten-minute break for the court

	Page 69
1	reporter to get her fingers resurrected again. And
2	if you have any questions during the break, we'll
3	certainly be glad to answer them.
4	(Break taken.)
5	MR. HARTMAN: Folks, while you get to
6	your seats, just to let you know, I have 12 cards
7	left and then we can go around again.
8	The next speaker would be Mark Hinrichs,
9	Mark, are you here? A hand up over there.
10	MR. HINRICHS: Mark Hinrichs, M-A-R-K,
11	H-I-N-R-I-C-H-S.
12	The question I have, at the beginning of
13	the night Larry spoke that we have a representative
14	here from the health department.
15	MR. HARTMAN: Yes, we do.
16	MR. HINRICHS: And I would like to know
17	what the study found for setbacks by their what
18	their study showed what the setbacks should be.
19	MR. HARTMAN: All yours, Carl.
20	DR. HERBRANDSON: I'm sorry. I didn't
21	see who asked the question. Can you hear me?
22	What we found was that if you increase
23	the setbacks or decrease the setbacks for a half
24	mile you get an increase in complaints.
25	UNIDENTIFIED: What?

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Page 70
 1
                     DR. HERBRANDSON:
                                        Increase in complaints.
          And the complaints are basically what we are looking
 3
          for.
                That seems to be what generally was found in
 4
          most of the studies that took place in Europe and it
 5
          also correlated somewhat with participation status.
 6
          If you're a participant, there were fewer
 7
          complaints, and that's basically what we were
 8
          looking at.
                     There don't seem to be any good studies
10
          out there for measuring actual health effect impacts
11
          and it's very difficult to say that a complaint is
12
          from a health effect. However, we know that some
13
          probably are and some probably aren't. And so, you
14
          know, the best way for us to look -- and the best --
15
          the way that most studies did look at it was in
16
          terms of complaints.
17
                     MR. HINRICHS: Yes. Did they recommend a
18
          distance?
19
                     DR. HERBRANDSON:
                                        No.
                                             We did not
20
          recommend a distance. Instead, what we stated was
21
          that from a half mile in you get an increase in the
22
          number of complaints.
23
                                   Next speaker is
                     MR. HARTMAN:
24
          Sue Hinrichs.
25
                     MS. HINRICHS: I'm Sue Hinrichs, S-U-E,
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Page 71 1 H-I-N-R-I-C-H-S. I have a question for the PUC and the 3 OES. Has the PUC or the OES done follow-up surveys to identify the effects of a large wind project on 5 residents and their quality of life? 6 MR. HARTMAN: We have conducted no formal 7 The Commission had a planning meeting a surveys. 8 while ago, that was one of the topics discussed. think Carl and I have also discussed that. 10 the turbine base in Minnesota, we think there are 11 ways through our surveys to get good feedback or, I 12 guess, accurate feedback on what people's -- I guess 13 what they perceive the reality of being as well as 14 perception. 15 I do stay in touch with a lot of the 16 individuals in western Minnesota where the earlier 17 wind farms are. I talked to, I guess, governing 18 officials and they basically don't really have any 19 complaints or problems to report. 20 I want to distinguish two things. 2.1 of the other people had asked earlier, we have a 22 complaint report procedure, that's a formal 23 complaint filed officially with us. You know, 24 again, probably over all the years I can only think 25 of maybe one formal complaint and only a handful of

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Page 72
1
          complaints that people have called me. And more
          often than not, that was speeding concrete trucks
 3
          more than anything else.
                     And, you know, again, I encourage people,
 5
          if you know people that live in western Minnesota
 6
          who live amongst the wind farms out there, call them
 7
          up, go out there. Take a trip sometime and talk
 8
          directly to them. I can tell you what I hear from
          them, but, you know, if you want to get your own
10
          answers, I'd say go out there.
11
                     I'd like to think there would be an
12
          opportunity for us to do some legitimate research,
13
          which might prove invaluable. It's something that
          we're having discussions about at this time.
14
15
          hasn't gone any further than that.
16
                     Next speaker, Thomas G-A-L-F, Galf
17
          (phonetic).
18
                                Gale.
                     MR. GALE:
19
                     MR. HARTMAN: Gale, oh, sorry. I thought
20
          it was an F.
2.1
                     MR. GALE:
                                 I'm Thomas Gale, T-H-O-M-A-S,
22
          G-A-L-E.
                    I'm a Belle Creek resident. I've got
23
          several questions.
24
                     The quality of life here. You were
25
          talking there is no complaints. Has anybody
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Page 73 1 actually looked for them or is this one of those things that we've done it and we don't go back and 3 we don't hear nothing? The other thing is, where does a person 5 actually address these issues? Do I talk to my 6 township? Do I talk to the county or the PUC? 7 one of those things, just because you're not hearing 8 them -- does it mean that they don't know where these are supposed to be filed or these people that 10 are hearing it don't pass it on to the network? 11 MR. HARTMAN: Well, if it's passed on to 12 the company it's supposed to be reported to us. 13 Again, as I mentioned earlier, one of the things we 14 tried to tighten up is, you know, making people more 15 aware of that. 16 They have it in the information they 17 receive; when the permit is issued every landowner's 18 mailed a copy of that permit. The procedure's 19 spelled out in there and again, I think, quite 20 honestly, we need to find a better way, or maybe 2.1 it's a separate mailing or something else, so people 22 are directly aware of that. So, again, we're 23 certainly open to -- excuse me -- to suggestions on 24 that also. 25 MR. GALE: I've also got a question. As

Page 74 1 far as these turbines age, has there been any studies after they've been installed as far as noise 3 levels? As things age, things generally tend to get Is there bearing replacements? How do you 5 handle issues like that? 6 I mean, are you going to take and go out 7 and actually say, you know, this one here's got a 8 bad bearing -- we're measuring the dB levels at 9 whatever distance they want to, being arbitrary, it 10 doesn't matter, as long as it's the same distance --11 and then take care of these problems. I mean, I see 12 no maintenance avenues with whatever we're doing 13 here. 14 MR. HARTMAN: With regards to -- you 15 know, yeah, most turbines have bearing problems 16 eventually, gear box problems, other types of 17 problems. When the equipment malfunctions or needs 18 to be replaced, it is replaced. 19 Again, that's more of a mechanical noise, 20 that's not a low frequency noise or some of the 21 other types of noise. If there's a gear box problem 22 or a bearing problem, the turbine's probably not 23 going to be operating in the first place. 24 MR. GALE: Okay. Is there any real 25 background -- I mean, one of your first slides said

Page 75 1 1,400, or was it 14,000 -- 1,400 wind turbines installed. 3 MR. HARTMAN: About that many, yes. 4 MR. GALE: Has anybody done anything to 5 sound test them after, to see if the modeling matches with what the actual is? 7 MR. HARTMAN: We did some measurements 8 back in the late '90s in some of the original wind We did monitor both before and after, and 10 they were in compliance. 11 Those were done by a company called First 12 Acoustical (phonetic) out of California. We issued 13 some permits recently in Freeborn County and a few 14 other projects where we are requiring noise studies 15 again. We expect a study protocol on one in the 16 near future which will be evaluated, and it's 17 supposed to be a protocol that measures sound at 18 different wind speeds, directions, as well as --19 excuse me -- different frequencies also to get a 20 handle for that. 2.1 Some companies do background monitoring 22 before. So again, the one we expect in the near 23 future would be the first, and the recent one we've seen, at least in Minnesota, I've tried to look at 25 some of the other noise studies in other cases,

Page 76 1 looking at some of the other turbines in Minnesota, and they seem to have been performed in a -- on the 3 A level, which is the noise regulator or noise 4 regulation administered by the Minnesota Pollution 5 Control Agency. 6 So the state of Minnesota does have a 7 noise standard, which is the L-50 nighttime standard 8 which is fairly -- some states have no noise standards, Minnesota does. I guess some of the 10 assertions associated with wind indicate that noise 11 be measured in other frequencies other than the A 12 scale. 13 And maybe, Carl, you could add to that or 14 elaborate a little bit. 15 DR. HERBRANDSON: 16 MR. HARTMAN: No? Okay. 17 DR. HERBRANDSON: I don't know what you 18 want. 19 MR. GALE: Yeah. I've got a couple more 20 questions. What happens when we take and get a test 2.1 out, and let's say we find out -- you say you're 22 going to have 40 or 50 is the threshold. When we've 23 got problems, all of a sudden we have some that's 24 above 50 dB. How do we handle this issue, is there 25 going to be some bonding and some way to buy

Page 77 1 somebody out? Are you going to tear the tower down? How are we going to handle these infractions? 3 MR. HARTMAN: Well, quite frankly, 4 there's a very simple answer. If they're in 5 violation of that, we can suspend, revoke, or modify the permit. Also, we can order them to shut down 7 the turbine, correct the problem and so on, perhaps 8 manage it if it's, say, when the wind is out of a certain direction, by controls on the SCADA system, 10 which stands for supervisory control and data 11 acquisition, so the turbine won't operate under 12 certain conditions. 13 MR. GALE: Has any of that action been 14 taken so far? Like an electrical contractor, we use 15 this thing about pulling meters if you don't take 16 care of your permits. I've pushed that issue on 17 several houses that were foreclosed on and it's 18 never happened. 19 Is there something that you guys actually 20 take and do, or is it just a threat that's hanging 21 out there that won't actually ever happen? 22 MR. HARTMAN: Well, when the situation 23 presents itself to the Commission, the Commission 24 will make that determination based on the 25 information in the record. So far it has not

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Page 78
 1
          happened.
                     MR. GALE: Okay. Another question here.
 3
          When you start doing these bases, what happens with
          the water, water tables? I mean, we're
 5
          predominantly -- we've got a lot of shale rock or
 6
          limestone. What happens when you go down -- I don't
 7
          know how far you go down, 20 feet or whatever, what
 8
          mitigation processes are there so we don't wind up
          with additional groundwater damage, pollution?
10
                     MR. HARTMAN: No, I understand the
11
          question. I'll let National Wind respond. I'm not
12
          that familiar with what foundation design they're
13
          using.
14
                     Anyone from National who would like to
15
          respond?
                    Identify yourself.
16
                     MR. WINDINGLAND: Yeah. Hi, my name is
17
          Steve Windingland, W-I-N-D-I-N-G-L-A-N-D. Sorry for
18
          the long name.
19
                     I'm an engineer with Western Professional
20
          Services, consultant to National Wind. And I guess
2.1
          my answer's probably shorter than my name. But the
22
          turbine foundations only go down eight feet,
23
          typically, so the groundwater is usually not a
24
          concern.
25
                     If it is, it's just -- excuse me -- a
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Shaddix & Associates (952)888-7687 (800)952-0163

Page 79 1 very little amount of dewatering pumping that needs to be done in construction, but we've never run into 3 any long-term issues with that. MR. GALE: Well, how do you handle when 5 I've got springs on my property that flow throughout 6 the year, whenever it rains it runs out the bottom 7 of my driveway? That's a relatively shallow 8 distance there for groundwater. MR. WINDINGLAND: On occasion we've run into that situation and we've taken that into 10 11 consideration when we site the final location of the 12 turbine to avoid situations that have really high 13 groundwater. 14 And we've constantly worked really, 15 really closely with landowners to try to avoid 16 impacts that really have negative effects like that. 17 I'd be willing to talk to you more about specific 18 concerns and areas. 19 MR. GALE: Sure. And I've got one more 20 question, lastly. Are there emissions from these 2.1 things, is there is any background studies on that? 22 I come out of the computer industry where in the 23 early '80s we weren't concerned about it and all of 24 a sudden started hearing stuff in Europe. We had to 25 start building cages around it and encase all this

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Page 80
1
          energy.
                     And later on, the United States picked up
          on that, and that's currently what's going on right
 3
          now with computer equipment. Do these things also
 5
          put out that same amount of RF with their
          transmission as well as the actual process of
 7
          getting the energy with the generators?
 8
                     MR. HARTMAN: I'm not sure I quite
 9
          understood the question, what does it go to?
10
                     MR. GALE: Well, RF emissions is radio
11
          frequency --
12
                     MR. HARTMAN: Radio frequency.
13
                     MR. GALE: -- and that has been known to
14
          cause damaging effects to the health of people.
                                                             The
15
          sooner you get away from it, the better off you
16
          really are. But if you're exposed to it for
17
          prolonged instances, it eats you from the inside
18
          out, various tumors, whatever comes about.
19
                     That's what they told me when I was with
20
          a developer for fourteen years and they come through
21
          with that whole process. I can't document that, but
22
          they were very concerned about it, they actually
23
          retrofitted a bunch of equipment.
24
                     MR. HARTMAN:
                                   Typically, the concerns you
25
          are talking about with respect to that are more
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Page 81 1 typically associated with high voltage transmission lines, if I understand your question correctly, 3 electric fields, magnetic fields, and there are 4 standards for that. 5 For example, the 345 line that bifurcates 6 that site, there are limits on the magnetic as well 7 as electric field on that. With respect to wind 8 turbines, power's typically generated at 690 volts, 9 it's then stepped up to 34.5, which is a fairly low 10 voltage, so the electrical effects are probably 11 relatively insignificant. 12 Typically, in the cables that typically 13 run underground, those tend to be -- I can't think 14 of an example right offhand, but those are also 1.5 insulated also. 16 We also have conditions in permits that 17 we issue regarding electrical interference, which 18 goes to TV reception, radio reception, microwaves, 19 any of a number of things that we're supposed to be 20 in compliance with the FCC standards on. If, for 21 example, there's a -- causes television reception 22 problems, the company would be obligated to correct 23 that problem. 24 Typically, that might be solved, for 25 example, by three or four different means:

Page 82 1 High-gain directional antennas could be one. Another one might be just going to satellite or 3 cable system -- probably satellite if you live in a rural area and cable's not available; relocation of 5 the receiving antenna. 6 There are cases -- for example, in 7 southern Minnesota a lot of people get their 8 microwave -- excuse me -- get their internet reception by microwave. And, again, that's a matter 10 of locating their receiving dish and it's more for a 11 signal going back rather than receiving. So there 12 are, you know -- depending on the situation. 13 Telephone interference is another issue. 14 Typically you'll find there are a number of -- oh, I 15 forget the standard numbers right now, but there are 16 design standards out there so -- electrical lines 17 are designed so as to minimize interference with 18 telephone lines, cable lines, other things like 19 that. 20 There are some standards out there and 2.1 they are mentioned in our permit, I just don't 22 recall what those standard numbers are right now. 23 So, yes, those -- and to date that has not been an 24 issue. 25 MR. GALE: Okay. My last question here

Page 83 1 is what if a person can't bear to live in this area? Is there going to be an option to buy people out if 3 they can't receive reasonable market value for their property? I mean, it's kind of what I'm saying, you 5 want to put them in there, if a person -- I'm 6 hearing one side of the story saying that there's no 7 difference in property value, I'm hearing somebody 8 else that they'll lose 30, 40 percent. Depending on where you're at in the 10 spectrum, I've got to believe it's going to cost 11 something someplace if somebody wants to relocate. 12 Is there going to be a viable option to get these 13 people out of any of these areas who don't want to 14 be a part of this situation? 15 MR. HARTMAN: Well, the state provides no 16 option, I don't know whether the company does or 17 There are a number of studies that address not. 18 real estate property values. Depending on your 19 point of view, you can probably find a study to 20 support your position. 2.1 The largest, most recent study came out 22 late last year from the Berkeley Lawrence Livermore 23 Labs, which is available online. I don't have a 24 copy with me, if you want to leave your name and 25 It's available online if you have access address.

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Page 84
1
          to a computer, you go to Google, type in -- the
          author's name is Ryan Wiser, W-I-S-E-R, type in that
 3
          and property values and the study will pop up
 4
          online.
                   It's about a four megabyte file.
 5
                     MR. GALE: Okay.
                                        Thank you.
 6
                     MR. HARTMAN:
                                   Next -- excuse me --
 7
          Nancy Ellison, please.
 8
                     Ray, right behind you.
                     MS. ELLISON: I'm Nancy Ellison,
10
          N-A-N-C-Y, E-L-L-I-S-O-N.
11
                     My parents bought a farm out in Belle
12
          Creek Township back in 1946. I grew up out there,
13
          and I've liked it out there in the country and love
14
          every inch of it. And it's a pretty hard decision
15
          to make when it came up to signing up for a windmill
16
          or not. And I have asked around, talked to a lot of
17
          people, phoned a lot of people, got all the people
18
          that I could at the time.
19
                     I drove down to Dodge Center one day.
20
          used to live in Hayfield for quite a few years
21
          before moving back to Goodhue County, and I looked
22
          at those windmills again. And I stopped and
23
          listened to how noisy they sound and so forth, and
          talked to several people.
25
                     I talked to Charlotte Ehrhorn (phonetic),
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Page 85 1 she used to be my insurance agent when I lived down there about 20 years ago. And she and her husband 3 have a farm right along Highway 56, there's a whole bunch of wind turbines right across the road. 5 talked with her and she said the highway traffic, 6 they notice that. They don't notice the wind 7 turbines across the road at all. She and her family 8 sleep well at night and they're healthy. Another time in a phone conversation I 10 talked with Duane Schmall, who has a feed store on 11 his farm along Highway 56 there. I used to buy 12 chicken feed when I lived down in that area. 13 Anyhow, he has a whole bunch of wind turbines. 14 sold strips of land, the way it was done at that 15 time, and has about a dozen wind turbines on his 16 several-hundred-acre farm. 17 He and his family still live in the house 18 there. They're unconcerned. He made a good deal 19 when he sold his strips of land for the wind 20 turbines they built and he's still farming, raising 2.1 his corn and beans and everything, under and between 22 the turbines. And he was satisfied with things. 23 Through the years I've been concerned 24 about Prairie Island. It's supposed to be safe, but 25 in the rare event that anything went wrong, it could

Page 86 be really devastating for all of southern Minnesota 1 and all the way down to the Gulf of Mexico. And, to 3 me, we're doing our part to allow wind turbines to be built on our property as an alternative, and we 5 would just like to do our part that way. 6 So that's one reason that we decided to 7 sign up with Goodhue Wind. My daughter, Elsa Kellem 8 (phonetic) of Wanamingo, she has four children. oldest ones are all in favor of wind, and we thought 10 of them and the future. My daughter hopes to have 11 some income from the wind turbine to put her 12 children through college. 13 She thinks that's just as important for 14 her children to have that income for a college fund 15 as it is for other people that might be opposed 16 because their children might have their scenery 17 interrupted or they can't see the stars as well at 18 So that's the point that she wanted me to night. 19 make tonight. 20 Thank you. 2.1 Thank you. The next MR. HARTMAN: 22 speaker would be Doug Sommer. 23 MR. SOMMER: Here. Doug Sommer, 24 S-O-M-M-E-R. 25 I've been to Palm Springs, too, and I've

Page 87 1 seen the windmills down there. Yeah, they look all right. You don't see any houses next to them, 3 though. A long ways away, at least it was when I 4 was there, maybe it's changed now. 5 Another comment I've got. There's 87 6 counties in Minnesota, Goodhue County is ranked 19th 7 for population. That seems like a lot of people, 8 you know, it's kind of dense. So we're, you know, 9 stepping on toes for -- I mean, it's good for the 10 big farmer, I guess, they got room to put them up. 11 The little farmer's stuck, he can't. 12 So -- and the EDA, we had a meeting here 13 just recently trying to promote tourism in Goodhue 14 County, I think one trip looking at a windmill, that 15 would be enough. I don't think it would promote too 16 much tourism with a windmill farm. 17 Another thing, maybe the windmills or 18 turbines, couldn't they possibly be condensed into 19 less acreages? I mean, what do they got, 32,000 20 acres or something like that? Couldn't that be 21 somewhat smaller, you know, so they wouldn't have to 22 bother quite so many people? 23 MR. HARTMAN: I'll give you an answer to 24 that question. You mentioned San Gorgonio Pass a 25 little while ago, which is outside of Palm Springs.

Page 88 I've been there. It's a fairly desolated area, no 1 homes there. If you've ever been there, all the 3 wind turbines are lined up in rows. There might be 4 50, 60 rows of wind turbines. 5 That's because the wind only comes from 6 one direction out there. So typically when the 7 desert heats up, you know, you get the wind coming 8 through the canyon and the pass there. Well, and so basically, when you do turbines like that, you put 10 them in rows very close together. 11 However, in Minnesota the wind comes from 12 different points on the compass. So if you look at 13 the compass, it's 16 points. In the application 14 you'll find the wind -- which shows, during the 15 year, how many, you know, hours per year the wind 16 comes from this direction, this direction. 17 Typically, the winds in Minnesota tend to 18 be, as I mentioned earlier, northwest to 19 south-southeast, so your turbines are laid out to 20 take the maximum exposure to the wind. So your 21 turbines tend to be further apart north to south and 22 a little bit closer together. I mean, you don't get 23 a lot of winds out of the east or a lot of winds out of the due west. 25 There's a phenomenon called -- which is

Page 89 1 referred to as wake loss. So basically if the turbines are too close together, what will happen, 3 it's kind of -- well, maybe another example might be 4 airplanes, for example. If you're on an airplane 5 and you're going someplace, well, you might wait a couple minutes before you take off. 7 Well, you wait to take off because if the 8 turbine reaches the wake created by the plane in front of you -- so as the air passes through the air 10 foils, energy is extracted. It's extracted from the 11 wind, so you get a lot more turbulence behind the 12 turbine and the wind is not as strong. So the land 13 airflow of that wind is disrupted. So as you kind 14 of -- as the wake goes down, it tends to kind of 15 dissipate and that wind speed kind of resumes again. 16 If your turbines are too close together, 17 you have a significant amount of wake loss. 18 typically, wake loss on a normal project is 19 probably, let's say, in the neighborhood of five to 20 seven percent, maybe a little bit higher. 2.1 which results in increased wear and tear on 22 turbines, shortens the life, increases your 23 maintenance costs. 24 Now, to get it down to zero percent wake 25 loss is probably equally unfeasible. That would

Page 90 1 mean the turbines have to be further apart, larger footprint, longer access roads, more underground 3 cable. That drives up your costs. Well, it's a question if you have all 5 these tradeoffs you make, so if you're designing a wind farm you basically would like to minimize wake 7 loss. Are you going to get it to zero? No, it's 8 not feasible economically. If they are too close together, that's going to increase your wear and 10 tear and maintenance costs on the turbine. 11 try to find, I guess, a normal range and like 12 anything else, there's tradeoffs. So that's why 13 turbines are as far apart as they are. 14 Typically, the turbine manufacturer will 15 also provide, with that turbine, a recommended 16 setback. If you put them too close together, that 17 would probably void the warranty and you wouldn't 18 have that warranty behind you in case there is a 19 So, depending on landscape features, size 20 of the land footprint, you're going to try to 2.1 optimize the energy produced. 22 Now, there are two basic models in wind 23 energy production. You can get the greatest number of kilowatt hours of low-cost energy. Minnesota's 25 kind of on the low-cost energy path, so we don't

Page 91 1 want to pay more for wind than we have to. comes to the rate base, and we as consumers pay for 3 that wind energy. Again, if wake loss is 12, 4 13 percent you're going to run your project into the 5 ground. 6 So there are a number of tradeoffs and 7 that's just a few of them. And so all those factors 8 are considered in the design, you know, of a wind And part of that goes to where landowners 10 would perhaps like them where you can't put them. 11 So even if a permit should be issued, 12 there's still a lot of downstream working with the 13 landowners, units of government, in terms of road 14 cuts per mile for the access roads that might 15 determine where the turbines are located. 16 becomes a fairly complex situation. 17 So that's kind of the short answer. 18 MR. SOMMER: Okay. Another thing, I'm on 19 the town board in Minneola, and this gentleman 20 before asked about what the township boards could 21 Well, basically they can't do anything, because 22 it's mandated by the state. I talked to the 23 Minnesota Association of Townships attorney and he said, forget it, there's nothing we can do. They'll 25 run over us, so that's a problem there.

Page 92 1 MR. HARTMAN: Yeah, if the township or any township or city or county should have concerns, 3 we'd certainly like to be aware of those townships. 4 They issue permits for road usage, though, or 5 driveway cuts or something else. 6 I know in some counties, for example, the 7 townships have delegated the road authority to 8 county highway engineers; that's an individual 9 county choice. A lot of counties that already have 10 wind turbines, a lot of road engineers are getting 11 together and they have kind of a guidance document 12 they're encouraging wind developers to use, and I 13 expect we're going to see more of that as more 14 counties are getting involved in that. 15 And, again, I think that group -- I'm 16 going to meet with again, I believe sometime in 17 April or May, and they continue to, I guess, 18 document their concerns and their approaches to 19 address what issues there might be with roads. 20 Okay. Now, with -- by 2025 MR. SOMMER: 21 we're supposed to have 25 percent renewable energy, 22 right? And maybe you said this, what percentage are 23 we at now, any idea? 24 MR. HARTMAN: I believe Xcel might be 25 at -- boy, I hesitate to offer a number. I think

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Page 93
1
          it's less than ten percent. It's probably between
          four and seven, but I'm not sure. I think Xcel, on
          their system, has 4,900 megawatts under contract.
 3
          That includes Minnesota, Colorado, Texas, New Mexico
 5
          and other places like that.
 6
                     The Minnesota number is one I'm not sure
 7
          on, but it's inching upwards. For example, Xcel --
 8
          excuse me -- Xcel is building a wind farm this
          summer, it's a turnkey project with developers
10
          building it, they're buying it. They did the same
11
          thing down in Mower County.
12
                     They're also going to be building some
13
          projects out in North Dakota. So it kind of depends
14
          where we are on time. And I believe if you look at
1.5
          kind of the time lines there, the utilities in
16
          general seem to be kind of on schedule trying to
17
          meet that 2020 or 2025. Some bear a bigger burden
18
          than others, though.
19
                     MR. SOMMER: Thank you.
20
                     MR. HARTMAN: Next speaker would be
2.1
          Richard Bauer.
22
                     MR. BAUER:
                                 I'm Richard Bauer, mayor of
23
                     Spelling, R-I-C-H, B-A-U-E-R.
24
                     And what I'd like to do is actually
25
          request both Goodhue Wind as well as the PUC to
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Page 94 1 really consider the economic development aspects of Both the City of Goodhue as well as the City 3 of Zumbrota would like to see a two-mile setback from our corporate limits, basically from an 5 economic development standpoint. 6 I think all you really have to do is look 7 to the south at Pine Island. If five years ago 8 there would have been wind turbines put to the south of them, there would no longer be a bioscience park 10 down there. So that's really our main, I guess, 11 issue, is economic development. We want to be able 12 to grow in an orderly manner. 13 In Goodhue County, if you were to have a 14 two-mile radius around each city -- it's about 15 488,000 acres in Goodhue County. If in fact you 16 exempted the two miles, there would still be 325,000 17 acres available for wind farms. So that's our 18 request. Thank you. 19 MR. HARTMAN: Thank you. 20 Next speaker, Scott Logan. 2.1 MR. LOGAN: First time I've got to use 22 one of these (indicating). Scott, S-C-O-T-T, Logan, 23 L-O-G-A-N. 24 This is directed towards AWA Goodhue. 25 Why are you proposing only a spring migration

Page 95 survey, bird survey? In the PUC permit, the U.S. 1 Fish and Wildlife Service said they wanted 3 on-the-ground surveys, horizontally and vertically 4 scanning radar during both the fall and spring 5 migration. 6 The FWS recommended that radar be 7 employed 24 hours a day, seven days a week during 8 migration and, at a minimum, from dawn to dusk during the breeding period. Is there going to be a 10 winter survey at all? 11 MR. PETERSON: Ron Peterson from 12 Westwood, again. 13 I'm not sure where the recommendation for 14 the radar survey is coming from. 15 MR. LOGAN: That was the PUC permit 16 application, it was a reply to your application. 17 MR. PETERSON: Well, we met with the Fish 18 and Wildlife Service and negotiated with them on 19 what surveys should be done, and a radar survey is 20 not included in the package that we all agreed to. 2.1 Breeding bird survey, that is -- I 22 described is what we ultimately arrived at. 23 MR. LOGAN: Are you aware that there is 24 winter foraging areas that -- I've got a couple 25 things I'd like to mention. Are you aware that bald

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Page 96
1
          eagles do use the footprint for winter foraging?
                     MR. PETERSON: I would not be surprised
 3
          if they're using areas along streams where it's not
 4
          frozen or maybe eating roadkill in the footprint,
 5
          but they do along the Mississippi River in places
 6
          where the water stays open.
                                       They follow the pattern
 7
          of the open water as it freezes over and thaws.
 8
          again, as I said before, I'm not sure why that's
 9
          relevant.
10
                     MR. LOGAN:
                                Okay. Because it's -- I'm
11
          sure you're aware of the Bald and Golden Eagle
12
          Protection Act?
13
                     MR. PETERSON:
                                    Yes, I am.
14
                     MR. LOGAN: And the take permits for bald
15
          eagles?
16
                     MR. PETERSON:
                                     (Nods head.)
17
                     MR. LOGAN: Okay. I'm quoting this from
18
          a CapX thing, it says, the implementation guidance
19
          for eagle take permits under CFR 22.26 and 50 CFR
20
          22.27 indicate that because breeding home ranges of
21
          bald eagles can extend up to two miles from the
22
          nest, new installation of potentially lethal --
23
          excuse me -- infrastructure should be sited at least
          two miles away from important bald eagle use areas.
25
          That would include nests and foraging areas.
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Page 97 1 I live about mile and a half from a bald eagle's nest, and I know some of my neighbors can 3 attest to that. And that was not on your initial 4 report. 5 MR. PETERSON: Well, as I indicated, bald 6 eagle being hit by wind turbines is beyond rare. 7 hasn't occurred, with all of the wind turbines that 8 settings in the country today. And it's --9 MR. LOGAN: Can I reply one more time? 10 Sorry, this is very important to me and to my 11 quality of life. My quality of life, I think, is 12 slipping away here. What do you -- what are you 13 proposing to do for postconstruction surveys as far 14 as bird deaths, bat deaths, and things like that? 15 MR. PETERSON: We have not been asked to 16 do postconstruction monitoring surveys. 17 MR. LOGAN: Why not? 18 MR. PETERSON: You'd have to ask the Fish 19 and Wildlife Service and the DNR that question. 20 they're going toward not requiring those surveys 2.1 anymore. 22 MR. HARTMAN: Scott, you mentioned CapX. 23 That's a transmission line project. And I know 24 they're looking into that for the transmission line 25 and one of the routes from Hampton Corners comes

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Page 98
1
          through the western side of this area, so I know
          that's something we're looking at for that.
 3
                     Now, maybe that's what their
          recommendation is for the CapX project versus this.
 5
          I don't know what documentation you have, but you
          mentioned CapX, I just thought you might be
 7
          referring to transmission. I understand the point
 8
          referring to wind turbines.
                     The next speaker would be Marie McNamara.
10
                     MS. MARIE McNAMARA:
                                           Thanks.
11
          Marie McNamara, M-A-R-I-E, McNamara,
12
          M-C-N-A-M-A-R-A. My voice is about as good as
13
          Larry's.
                     (Indicating throughout.) I've got a CD
14
15
          to turn in.
                      It's got, I don't know, somewhere
16
          between 90 and 100 documents related to health
17
                   I've got a visual here. Can you hold this
          issues.
18
          up? I'll try to be quick here.
19
                     I don't know if any of the people have
20
          seen this. It was presented up at the PUC and I see
21
          that the wind company has a couple maps over here.
22
          My comment tonight in regards to the environmental
23
          is of course people, most of all. And I don't think
          that the half mile is out of line at all.
25
                     I think that we have to not worry about a
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Page 99 1 project not going in with a half mile; what we have to worry about is the people first, before we worry 3 about we can't put the project in. People are 4 foremost, like some of the other presenters said, 5 and if it doesn't fit in this area, maybe it doesn't fit in this area. 7 I know you mentioned Buffalo Ridge and 8 some other places. This map shows the preliminary map that the wind company put in and it shows the 10 turbines that are in orange that are located 11 incorrectly. And we asked about it, and the 12 response was, it's preliminary. And my question 13 would be, when do we find out when the correct 14 siting is put in place? When do we find that out? 15 And then the green dots on this map show 16 that there's homes missing, they weren't put on the 17 And I see that there's a comparison map over 18 here that National Wind has, but I would say that a 19 plat book is about 30 bucks, and I used a -- I think 20 an '08 and an '09 one to put the homes on there. 21 I don't know why their homes are not on there. 22 So I would like to know when we can find 23 out the final turbine location, can we find it out as soon as possible? Because that would influence 25 environmental scoping.

Page 100

And then I'd like to concur with some of the other speakers up here. I guess my feelings are exactly opposite of Sara Nord's about her mention of the majestic, and my feeling is the exact opposite of that, that we're not supposed to be considering, you know, the view or the looks of it, I guess.

As far as the other parts of the environmental, I called the National Eagle Center and just to illustrate that this is really a political issue as much as anything else, they don't want to comment on it because they are the PR wing for the American bald eagle and the golden eagle.

And they're afraid to comment on it because some of their funding might be cut or people might, you know, sway a little bit of their thinking about their facility, so they won't even speak up. So I think it's really imperative that the bird situation is looked at.

Along with people, I would say the animals, the wildlife, and soil displacement -- I know some speakers up at the PUC gave some really good thoughts there and I concur with the thoughts on the water table and the water -- the wetlands that the soil conservation people will be concerned about. I think that there should be pre- and post,

Page 101 1 and if there's not going to be post follow-up studies, I think that that's a really negligent 3 course of action. And I know some of the Commissioners have 5 commented to me, too, that they feel at a certain point they'll stop -- be able to stop things and 7 take a look at it, but I would maintain that sooner 8 would be better than later because as I -- as we've looked we find out that once they're up, they're up. 10 And once they get to a certain point and the permits 11 are in place, we don't stop it. 12 And as far as health, too, it's being 13 looked at all over the world, and the CD here tells 14 a lot of studies and I don't think they should be 15 dismissed. In the application a lot of times it 16 says no problem or no mitigation is anticipated. 17 And as many times as you see that in the 18 application, I think that that's almost 19 unbelievable. But it's in the preliminary 20 application -- if this is a preliminary application 21 it's in the application that many times. 22 I've got another document to submit 23 tonight too and it's about claims of wind farm 24 illness in Australia. Japan too is doing a 25 nationwide study right now. In Australia, I know

Page 102 1 about it because I have a friend that lives in southeastern Australia, and they call it Waubra 3 disease there because of the people in a town that 4 everybody is sick in this town because of the near 5 location of the turbines. 6 And I also want to make note that in the 7 application, it tells the hub height of these 8 towers, it doesn't mention the full height. don't think people realize, like our first speaker 10 said, just how big these are and that it's economic 11 as well as the environmental scoping. But that 12 comes later with need, is that right, Larry? 13 There's more meetings for need and for --14 MR. HARTMAN: There will be a hearing on 15 need and there would be a meeting on --16 MS. MARIE McNAMARA: On siting? 17 MR. HARTMAN: Yes. 18 MS. MARIE McNAMARA: And my very last 19 question, why are we in Mazeppa, which is in Wabasha 20 County, tonight? Because I did check and the Lions 21 building is open and I think I've seen at least this 22 many people at a wedding reception at the Lions 23 building. And it's also open in April, so my last 24 question is, can we have a meeting in Goodhue or 25 Zumbrota in Goodhue County?

Page 103 1 We can certainly try. When MR. HARTMAN: we -- again, I apologized for this earlier, when we 3 were trying to select a meeting place based on the schedule, we had to change the meeting date from 5 what we had originally scheduled to meet our notice requirement. So as a function of what was available 7 on certain days, and we kind of went with what was, 8 I guess, the best educated guess at that time. MS. MARIE McNAMARA: It's open tonight at 10 the Lions building and she said Tuesdays, Wednesdays 11 and Thursdays are really good and it's open through 12 I think there's a few Lions members here, 13 And also the Belle Creek roller rink is wide 14 open. 15 MR. HARTMAN: Can we get skates? 16 MS. MARIE McNAMARA: What's that? 17 MR. HARTMAN: Can we get skates? 18 MS. MARIE McNAMARA: If you want to. 19 MR. HARTMAN: I'd like to respond to one 20 point you raised, Marie. When the Commission issues 21 a site permit, that kind of permits the box. So the 22 turbines will be in this box. The permit conditions 23 have setbacks from roads, homes, nonparticipating landowners. 25 When the Commission issues a permit

	Page 104
1	there's still a lot of work to do regarding turbine
2	placement. As I mentioned earlier, for example, a
3	county might have a limit on the number of driveway
4	cuts per mile, maybe that affects turbine location.
5	There are a lot of things downstream that go on that
6	affect it. It might be something DNR puts in the
7	record, maybe something from a different agency. So
8	if we have the information we can be more specific.
9	However, we generally just kind of permit
10	the box and turbine location is determined in
11	consultation with other local units of government as
12	well as landowners also. So again, yes.
13	MS. MARIE McNAMARA: Do you have any
14	information slips tonight here for people that want
15	to submit more before March 26th?
16	MR. HARTMAN: Yes, we do. They should be
17	at the table up there. So if you don't have one
18	pick it up on the way out. If you friends who
19	aren't here, take a copy for them, go to Kinkos or
20	whatever and make a copy.
21	The next speaker would be Paul Reese.
22	MR. REESE: My name is Paul Reese,
23	P-A-U-L, Reese, R-E-E-S-E.
24	My family and I farm near Goodhue, we
25	have for generations. Thanks. Okay. Since this is

Page 105 1 for the certificate of need docket, who needs this project? Anybody? MR. HARTMAN: Well, I guess if you 3 4 consider there's a legislative mandate directing 5 utilities to provide renewable energy sources, wind 6 is first and foremost at this time. But I think 7 that's what developers are responding to to meet 8 that legislative established standard. MR. REESE: Is there any -- are there any 10 studies that show that wind power will actually 11 decrease carbon emissions? 12 MR. HARTMAN: Yeah, well, I don't look at 13 a lot of those. Some of the numbers I've seen, you 14 can see kind of the equivalency displacement on them 15 per hour production, and they do kind of mount up. 16 In the total scheme of things, they may not be that 17 significant. 18 It's something we can certainly take 19 under advisement. I'm sure there are numbers out 20 that would address that. As to how accurate they 21 are, how up-to-date or anything else, I don't know. 22 I can certainly try to do some research on that and 23 provide you with additional information and we can look at that or provide additional information in 25 the environmental report.

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Page 106
1
                                  Okay.
                                         Thanks.
                                                  I quess now I
                     MR. REESE:
          can move on to my comment. We -- our family has
 3
          been biological farmers for 40 years now, I guess.
          We focus on soil carbon. We try to put carbon into
 5
          the soil.
 6
                     If the farmland under cultivation
 7
          increase their carbon by one percent we return
 8
          atmospheric carbon levels to pre-industrial
          revolution levels. Let me say that again.
10
          increase the carbon in your fields by one percent,
11
          the atmospheric carbon would drop to pre-industrial
12
          revolution levels. We need to protect farmland
13
          instead of tearing it up and burying it to erect
14
          these wind turbines that aren't proven, not proven
15
          to help anything.
16
                     MR. HARTMAN:
                                   Thank you.
17
                     I have three comment speaker cards left,
18
          and the speaker cards all involve the Bucks,
19
          Don Buck, Anna Buck, and Dave. So I don't know if
20
          you're together or different families or not.
2.1
          let's start with Don.
22
                     MR. DON BUCK: Don Buck, D-O-N, B-U-C-K.
23
          I live in Zumbrota Township.
                     In answer to Paul's comment, he said who
25
          needs it?
                     Xcel Energy, we heard, is all excited
```

Page 107 1 about buying it. Even though the nuclear electricity they produce is only a third of the 3 cost, they have to, by mandate. However, they have 4 to buy more than most because they have all the 5 nuclear waste cask storage, so the law states that they to buy even more than 25 percent. So they're 7 all excited about this cheap wind. 8 Secondly, they still need baseload. 9 other words, when the wind doesn't blow they need 10 nuclear, they need coal, they need natural gas 11 peaking plants. They can't cut back on that because 12 who wants to live -- history has proven that the 13 coldest days and the warmest days, quite often 14 there's no wind. And consequently, that's when the 15 energy need is greatest. We want to cool our 16 houses, we want to warm our houses. So let's talk 17 about baseload. Wind is not part of that formula. 18 Secondly, you investors, how many of you 19 would be in with your money if the federal 20 government wasn't making big subsidies as to even 21 starting these wind farms, much less the value that 22 they generate for the years to come? 23 Thank you. 24 MR. HARTMAN: Ann Buck. 25 MS. BUCK: Ann Buck, A-N-N, B-U-C-K.

Page 108 1 I am a member on our local Goodhue school I need to disagree with the comment on how 3 this is good for our school. Our superintendent has stated there will be no dollars coming to our school 5 from this wind farm. 6 In fact, I'm already seeing how this will 7 be a detriment to our school and ultimately our 8 community. There are families that are not buying homes in Goodhue and in our surrounding area because 10 they do not want to live in or around a wind farm. 11 Therefore, fewer children in our school means less 12 revenue for our school. I am a firm believer that 13 if we have a strong school we will have a strong 14 community. 15 MR. DAVID BUCK: David Buck, spelled just 16 like it sounds. 17 I want to get back a little bit to the 18 financial end of it, as Don alluded to. And I think 19 it's a 30 percent federal tax credit that the banks 20 were more than willing to lend. Obviously because 2.1 the government is paying for 30 percent of it, that 22 probably doesn't -- that's a general issue with 23 wind, not particularly our area, I guess. 24 Mr. Hartman, you alluded earlier to the 25 projection and reality of the dollars, I think.

Page 109 1 called the Cottonwood County treasurer to get a piece of reality and asked them what they were 3 generating down there and he thought it was around \$2,300 per turbine, which is a long ways from what I 5 think they're projecting here. 6 He kind of laughed when I asked him how 7 much money they're generating. Well, it's zero so 8 far, because the state controls the production of tax credits and they kind of withheld it because the 10 state was out of money so they haven't seen a dollar 11 yet and they've been operating for two years, was 12 his statement. They will get it eventually, I 13 assume, but they are out -- actually behind right 14 now because they had to pay the township their money 15 and the state their money. 16 One other issue I haven't seen addressed 17 here maybe is road care during and after 18 The largest financial asset of the construction. 19 county is the road system and we need that to be 20 protected. And I -- you know, I understand the wind 2.1 companies will say, you know, that they'll take care 22 of it. 23 I would strongly suggest you get a 24 performance bond or something from them to quarantee 25 Signing a piece of paper saying that is worth that.

Page 110 1 a lot more than a verbal notice that, yeah, don't worry, we'll take care of it. And that would go for 3 the townships also. 4 I guess that's all I have. 5 MR. HARTMAN: Most of the road permitting 6 authorities -- as I mentioned earlier, there's kind 7 of a standard document being used that counties are 8 developing and asking wind developers to abide by. And I just spoke to a county highway engineer the 10 other day and he actually said -- and I'm not 11 exaggerating, he said the company left their roads 12 in better shape after they were done than they were 13 before they started. 14 And, again, I know there have been some 15 issues, I think the counties have worked pretty 16 diligently to kind of address their concerns. 17 think the wind developers have been fairly 18 responsive to infrastructure issues and a lot of 19 times, you know, we certainly encourage you to work 20 with the permitting authority and use the county 2.1 engineers to determine what their road plans are, 22 bridges, in terms of establishing all those other 23 things like that. And the engineers I think have 24 been pretty responsible for addressing those issues 25 in a very timely fashion to date.

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Page 111
 1
                     That's the end of the cards that people
          signed to speak. Are there any other people who
 3
          would like to ask some questions? I'll call on you,
          so get your hands up and you'll be taken care of.
 5
          Are there people who'd like to leave now before we
          maybe start the second round of questions?
 7
          just maybe take 30 seconds if people want to leave.
 8
          If not, go ahead.
                     MR. OVERBY: Yeah. I've got a quick
10
          question. I'm Bernie Overby, town board, Kenyon
11
          Township. B-E-R-N-I-E, O-V-E-R-B-Y.
12
                     One thing I wonder, what are the state
13
          setbacks from property lines and buildings, exactly?
14
          What are they? What distances have the state put
15
          into setbacks from property lines and from
16
          residences?
17
                                  From property lines of
                     MR. HARTMAN:
18
          participating landowners?
19
                     MR. OVERBY: From nonparticipating.
20
                     MR. HARTMAN:
                                  Nonparticipating
21
          landowners, it's defined as a three-rotor-diameter
22
          axis buffer, that's a function of the rotor
23
          diameter.
24
                     MR. OVERBY: Rotor diameter times three.
25
                     MR. HARTMAN: Rotor diameter times five
```

```
Page 112
 1
          on the prevailing wind axis, three on the
          nonprevailing.
 3
                     MR. OVERBY: And residence?
 4
                     MR. HARTMAN: Typically -- well, it's
 5
          been far enough away to meet the PCA noise standard,
          that's a function of each individual turbine.
 6
 7
          Lately, as National Wind indicated, they're going to
 8
          be 1,500 feet away from nonparticipating landowners'
                  It could be further away from property lines
10
          depending on the configuration.
11
                     And typically the Commission is, I guess,
12
          looking at, if the docket is open, on the setback
13
          from homes. In recent permits that, you know, some
14
          companies have said we're going to be 1,500 feet
15
          from all homes. Other companies have said 1,000
16
          feet, some 1,200. And if they give a number we'll
17
          hold them to that. I don't know what number, I
18
          don't remember your number from homes.
19
                     MR. BURDICK: 1,500.
20
                     MR. HARTMAN: Fifteen?
2.1
                     MR. BURDICK: 1,500.
22
                     MR. HARTMAN: 1,500, from
23
          nonparticipating or participating or both?
24
                     MR. BURDICK: From nonparticipating.
25
                     MR. HARTMAN: And how about participating
```

```
Page 113
1
          landowners?
                     MR. BURDICK: Between 1,000 and 1,500.
 3
                     MR. HARTMAN: Between 1,000 and 1,500.
 4
          So if people are participating they'll be at least
 5
          1,000 to 1,500 feet away from homes. If you're a
 6
          nonparticipant, 1,500 feet away from the homes.
 7
                     Any other questions? Lady in the blue
 8
          shirt.
                                            It's
                     MS. ROSENQUIST: Hi.
10
          Kristi Rosenquist, K-R-I-S-T-I, Rosenquist,
11
          R-O-S-E-N-Q-U-I-S-T.
12
                     The decibel level measurements, are they
13
          done -- when are they done, when it's generating or
14
          when it's not generating power? Because the noise
15
          from the towers changes quite a bit. When they're
16
          feathered down, not generating, is actually a lot
17
          louder than when they are actually turning and
18
          generating. So are the measurements done when the
19
          thing is turning and producing, or when it's in idle
20
          status, whatever they call that, I don't what the
2.1
          terminology is.
22
                     MR. HARTMAN: It might be under a variety
23
          of circumstances, operational, nonoperational,
          different wind speeds, winds being in different
25
          directions also.
```

Page 114 1 MS. ROSENQUIST: Right. So the decibel level, though, that they're quoting and stating is 3 measured when, is that the maximum decibel level of 4 any operation? 5 MR. HARTMAN: It's typically measured at 6 worst-case scenario, which tends to be operational. 7 MS. ROSENQUIST: And does the 8 environmental impact statement look at all the effects on farm animals, if there are any, and have 10 there been any studies done on that? There's some 11 anecdotal stories out there that dairy farms have 12 had stray voltage issues around turbines and they've 13 had rather dramatic drops in production and things 14 like that. Is there any study or a number of 1.5 studies --16 MR. HARTMAN: Stray voltage -- to answer 17 your question, the question came up last week at 18 another meeting when I was asked, and I'm not aware 19 of any studies where -- measuring the effect of any 20 effects associated with wind turbines and farm 2.1 animals. I know there have been studies from 22 electrical transmission lines, for example. Again, 23 wind turbines are significantly different voltage 24 and, again, it's generated at DC converted to AC 25 when it goes over the distrubution system at

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Page 115
1
          whatever. You're, you know, typically 34.5, here it
          will go to a substation, it's up to 34 to 69.
 3
                     Typically, you know, more often than not
 4
          stray voltage is associated with things not being
 5
          properly grounded on the farm. And if you work with
          a co-op, at least they should work with you if
 7
          there's a grounding issue to find that and correct
 8
          that. Generally it's not been an issue associated
          with high voltage lines, it's more distribution and
10
          what's on the farm, then, also.
11
                     MS. ROSENQUIST: So you're saying it
12
          isn't coming from the tower?
13
                     MR. HARTMAN: Correct.
14
                     Did I answer all -- did I answer
15
          everything?
16
                     Ray, next question to your right.
17
                     MS. LOGAN: Hi. Erin Logan, E-R-I-N,
18
          L-O-G-A-N.
19
                     My question is targeted toward Goodhue
20
                 I would like to know if all the original
21
          local investors are included in the 30 percent
22
          investment federal tax credit, or if that only
23
          applies to our newest local investor who's based out
24
          of Texas.
25
                     My second question is, did you give
```

Page 116 1 everyone the same deal when you signed them up? Did everyone get the same signing bonus and did all 3 landowners get the same payment per acreage whether they signed up for turbines, setbacks, or a 5 combination thereof? 6 MR. BURDICK: The 30 percent investment 7 tax credit is typically factored into the final and 8 allows us get to a lower rate. It's part of what we considered in our bid package to Xcel and I think 10 part of what the current market reflects in selling 11 wind power to a utility. 12 The next question is, did all the 13 landowners get the same compensation. The short 14 answer is yes. Some of the early landowners signed 15 up under original terms, and when we modified those 16 terms we went back to them and made them equal. 17 A third question was whether the 18 participants and the full leaseholders get the same 19 compensation. The answer is no. A full lease gets 20 a higher amount of compensation than a participant. 2.1 MS. LOGAN: So I just want to confirm 22 that if you modified the contract you did go back to 23 all the original landowners and give them the same 24 compensation package as was given to the newest 25 people who signed your contract.

```
Page 117
 1
                                   Yes. Everybody should have
                     MR. BURDICK:
          equal compensation. If anybody feels they haven't,
 3
          they should contact me to make sure that they did.
 4
          But I know specifically we did kind of an audit of
 5
          our leaseholders a couple months ago and made sure
 6
          that they were, you know, equalized.
 7
                     MR. HARTMAN: Any other questions?
 8
                     Yes, sir.
 9
                     MR. STENLUND: I'm Neal Stenlund,
10
          N-E-A-L, S-T-E-N-L-U-N-D. I've got a farm in
11
          Goodhue Township and in Belle Creek Township.
12
                     And I was wondering, what I got on the
13
          farm in Belle Creek, I've got a federally approved
14
          airstrip and nobody seems to recognize that and
1.5
          they're putting towers in within -- five or six of
16
          them now. What rights have I got? I was supposed
17
          to have rights to my land and it's not -- it's been
18
          there for pretty near 35, 40 years.
19
                     MR. HARTMAN: The airstrip has?
20
                     MR. STENLUND: Yeah. So what can I do
2.1
          about that?
22
                     MR. HARTMAN: I don't know how far the
23
          proposed turbines are from your airstrip.
24
          registered with the Minnesota Department of
25
          Aeronautics?
```

```
Page 118
1
                                   Yeah.
                     MR. STENLUND:
 2
                     MR. HARTMAN: Okay. I talked to them the
 3
          other day and this question came up on another one.
 4
          And they're going to check into it and get back to
 5
          me with an answer. If you want to give me your
          telephone number, when she calls me back I will pass
 7
          on the message I get for the other person that asked
 8
          me last week and provide that with you also.
                     MR. STENLUND: Okay.
10
                     MR. HARTMAN: Did you fill out a
11
          registration card or a mailing card?
12
                     MR. STENLUND: Yes.
13
                                   Be sure -- I'll give you a
                     MR. HARTMAN:
14
          card so you can call me or give me your phone number
15
          before you leave.
16
                     Was there a question back over there,
17
          Ray?
18
                     MR. MATT McNAMARA:
                                          I'm Matt McNamara
19
          M-A-T-T, M-C-N-A-M-A-R-A. And I was wondering, is
20
          there any doubt that wind-generated electricity
21
          costs more than other forms of electricity?
22
                     MR. HARTMAN:
                                  Well, it's a hard question
23
                      It depends on where you are in the U.S.
          to answer.
          Now, in Minnesota, for example, Xcel puts request
25
          out, so people submit bids and those bids are
```

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Page 119 1 reviewed by the Commission as part of the PPA process. In fact, I think some companies have been doing wind because it comes in cheaper than a 3 4 comparable equivalency, gas and such, it depends on 5 price of gas. 6 You don't get long-term contracts in gas 7 anymore. In this market, gas is cheap right now. 8 When that bubble bursts, and it will, gas prices will go up again so that will make wind look more 10 competitive. 11 With regard to thermal qualities they 12 typically do cost more versus installed kilowatt per 13 hour basis. That's looking at, say, typically coal, 14 I don't know if our numbers are current in biomass. 15 biomass. Solar is still fairly expensive compared 16 to wind or other types of generation resources. 17 I know it's not a direct answer, I can't 18 give you a cents per kilowatt, but each project's 19 bid a little bit differently. 20 MR. MATT McNAMARA: And if there weren't 2.1 any taxpayers dollars funding these wind projects, 22 what would the cost per kilowatt hour in the 23 purchase power agreements have to be? I mean, it 24 would be considerably more than it is right now, I 25 would think.

```
Page 120
 1
                     MR. HARTMAN: Well, if you look at the
          way deals are structured, you know, if you have a --
 3
          you know, you need to have enough federal tax
 4
          credits, for one thing. And again, I can't say it's
 5
          a payment, there might be a credit which comes off
          taxes you might owe. So it's like anything else,
 7
          people are going to work the numbers to do what
 8
          works best for them.
                     MR. MATT McNAMARA:
                                         Well, what it comes
10
          down to is money is coming out of taxpayers'
11
          dollars -- taxpayers' and going into the wind
12
          companies' to fund their wind projects.
13
                     MR. HARTMAN: Well, there's not taxpayer
14
          dollars involved.
                             There's a federal tax credit, so
15
          they're not making, necessarily, a payment per se,
16
          it's a tax credit.
17
                     UNIDENTIFIED: Well, it's money you
18
          borrow, then, right?
19
                     MR. MATT McNAMARA: Yeah.
                                                 They would
20
          have paid taxes.
2.1
                     MR. HARTMAN: Well, that's basically the
22
          premise of the economy and the way it's going right
23
          now.
24
                     UNIDENTIFIED: And that's good?
25
                     MR. HARTMAN: I'm not saying that's good.
```

	Page 121
1	If you look at something else, there are a lot of
2	tax credits, and I'm not saying wind should be
3	treated differently. That's the way it's
4	structured, so that's a legislative issue and they
5	are the ones that make the laws and they're the ones
6	that establish policies.
7	MR. MATT McNAMARA: Also, have you or
8	your office recommended reduction of the renewable
9	mandate due to the recent scandal involving those
10	responsible for formulating the global warming
11	models?
12	MR. HARTMAN: No. Quite frankly, that's
13	not why we're here is to receive comments on the
14	environmental report. If you have a comment for the
15	environmental report, fine.
16	MR. MATT McNAMARA: Isn't global warming
17	part of the reason why isn't that part of the
18	reason why they have these mandates, due to the
19	environment and everything?
20	MR. HARTMAN: Minnesota has its own
21	mandate.
22	MR. MATT McNAMARA: Yes.
23	MS. PILE: I just want to stress that
24	what my group really does is about the siting
25	aspects and we do the environmental report for the

```
Page 122
 1
          certificate of need. We're not involved in the real
          merit or evaluation of the need aspect. That's not
 3
          something that's really in our area of expertise.
 4
          And it's very interesting questions, but they're
 5
          really way outside --
 6
                     MR. MATT McNAMARA:
                                         Okay.
 7
                     MS. PILE: -- of the area that we deal
 8
          with.
                     MR. MATT McNAMARA:
                                          So this is just the
10
          local environmental aspects of the project?
11
                     MR. HARTMAN: Yes.
12
                     MR. MATT McNAMARA: Okay. And I would
13
          comment that you should take in consideration the
14
          quality of life issues in the local areas, and I
15
          don't believe that the wind companies are
16
          particularly qualified to make those assessments
17
          since they're generally not in the area themselves.
18
                     MR. HARTMAN: Any other questions?
19
          of hands?
20
                     MR. KELLER: Henry Keller, H-E-N-R-Y
2.1
          K-E-L-L-E-R.
22
                     The state's mandating renewable energy.
23
          Has the state ever offered any of their land to have
          wind turbines put on?
25
                                    I suggested that, I haven't
                     MR. HARTMAN:
```

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1
          gotten very far. I know, for example, the DNR has a
          small wind turbine in a state park in northern
 3
          Minnesota someplace. They are possibly looking at
          hosting wind turbines on some of the property
 5
          administered or controlled by the DNR.
 6
                     Other than that, I'm not aware.
                                                       I know
 7
          other states have made an initiative to buy
 8
          renewable energy; Minnesota hasn't gone that far
 9
               They're good at mandating it.
10
                     MR. KELLER: Yeah, they have, I believe,
11
          around 8.3 million acres and we don't have people
12
          living there and might not cause problems between
13
          neighbors, anyway.
14
                     MR. HARTMAN: Well, that's one of the
15
          problems where a lot of DNR land is sort of held.
16
          quess if you look at northern Minnesota, and it's
17
          very poor wind resource up there, so.
18
                     Any other questions? The lady over there
19
          has a question.
20
                     MS. TRI: My name Ellie, E-L-L-I-E, Tri,
2.1
          T-R-I, is my last name.
22
                     I live in Red Wing and I've owned a home
23
          for two years now. And my husband and I always talk
          about buying our forever home and where our forever
25
          home is going to be. You know, when I grew up in
```

Page 124 1 Wisconsin, just across the border, podunk little neighborhood, it was wonderful. You know, all my 3 family are farmers. But when we talk about buying our forever 5 home and I look at all this talk of all the 6 beautiful, serene windmills going up, I look at it 7 and I go, that will be not where we live. 8 know that a lot of my friends talk the same way. 9 When they talk about buying acreage and owning 10 farmland, they don't want land with windmills on and 11 wind farms on it or next to it. And I don't know 12 why the people that are running our government don't 13 understand that. 14 And this is coming from a 24-year-old 15 young lady. If I understand it, these people that 16 have been through power plants and been through all 17 these different things should get it. 18 I had a question for one of the head 19 honchos at the windmill place. From all the 20 research I've done, it says that there's not shadow 21 flicker at 1,500 feet. Would that be a correct 22 statement? I don't know which one of you guys to 23 direct that at. 24 MR. BURDICK: We stated we're going to do 25 shadow flicker modeling. I think shadow flicker's

Page 125 1 an important issue to look at. UNIDENTIFIED: We can't hear you. 3 MR. BURDICK: We stated we would do shadow flicker modeling and it is an important issue 5 to look at. Shadow flicker has kind of a weird 6 shape around each turbine, so it's possible -- it's 7 very site-specific on how the shadow flicker falls 8 from a given turbine to a given home. MS. TRI: And is that anywhere on your 10 website? It's on all our documentation that it's 11 particular windmill to windmill and farm to farm and 12 land to land. Because all the documentation I've 13 seen says 1,500-foot setback is so generous, it's so 14 wonderful for us to give that to you. 15 Well, we have video and -- upon video and 16 testimony upon testimony of people that have shadow 17 flicker and humming, and I don't -- I think I've 18 heard of one person, maybe two, that are here 19 tonight that think that's a wonderful sound. 20 you look here, I have it on my laptop, that's 1,500 2.1 That windmill is 1,500 foot from that feet. 22 person's farm. That would drive me absolutely 23 bonkers. 24 Would you want me flashing my headlights 25 in your windows, whether it's an hour a day or a

```
Page 126
 1
          half hour a day or for the whole day?
                     MR. BURDICK: Shadow flicker is one of
 3
          the factors that we looked at in creating our
          voluntary setback. It's one of the factors that
 5
          we'll look at when we do our final site.
                     MS. TRI: Is it something that's going to
 7
          be addressed before they go -- you guys got these
 8
          contracts with these farmers, and these farmers and
          these people that own this land have signed
10
          contracts and you're saying, well, yeah, but we have
11
          to go back and do this, we have to go back and do
12
          this. We have a study going, go back and do this.
13
          But meanwhile, you guys are building your turbines.
14
                     MR. BURDICK: Yes, it will be addressed
15
          before they go up.
16
                     MS. TRI: So it will be written in the
17
          contracts?
18
                     MR. BURDICK: No.
                                        It's not written into
19
          contracts. It's a fact that we'll consider when
20
          we're doing the final site.
2.1
                     MR. HARTMAN: It's also something that
22
          has been recently addressed in our site permits
23
          also.
24
                     Over here.
25
                     MR. GORMAN: Bill Gorman, B-I, double L,
```

Page 127 1 I live in Belle Creek. G-O-R-M-A-N. Since our township roads are too small or 3 too narrow to accommodate some of this machinery 4 that will be coming through, and since the township 5 only owns a certain amount, how do you compensate 6 nonparticipating landowners when you're spilling and 7 tracking into their fields? 8 MR. HARTMAN: If you're a 9 nonparticipating landowner, they have no business 10 being in your field unless you give them an easement 11 or access, if I understood your question. 12 MR. GORMAN: Well, correct, but if you --13 when you're going to turn a corner, your corners are 14 filled in, that's going to spill out past the 15 township's jurisdiction so we're going to be in 16 somebody's field. 17 Okay. Well, typically, if MR. HARTMAN: 18 your nominal road width is 66 feet now, given the 19 length of the blade, the trucks carrying probably 20 need a 150-foot turning radius coming in, probably 2.1 120 feet coming out if you've offloaded the blade or 22 whatever the longest component is. 23 So you might go back to where you have 24 the road intersection, where you might, you know --25 well, you might open it up, lay in a culvert and

```
Page 128
1
          then extend the road base over that. And then when
          they're done they go pick all of that up and remove
 3
          the material that was used for fill to allow the
 4
          trucks to come in.
 5
                     Now, again, your question goes to if
 6
          something is, you know, on the road or something
 7
          else, typically the companies clean vehicles before
 8
          they cross roads, at least the larger equipment, the
          cranes, and other things like that. They tend to be
10
          moved on -- I lost the word right now. Your smaller
11
          equipment would be your -- basically your concrete
12
          trucks, typically trucks for workers, electricians,
13
          other people like that.
                     MS. LUDWIG: Connie Ludwig, C-O-N-N-I-E,
14
15
          L-U-D-W-I-G.
16
                     I'm concerned with -- back to the flicker
17
          situation.
18
                     MR. HARTMAN: Yes.
19
                     MS. LUDWIG: It depends on what time of
20
          the year it is for the sun.
2.1
                     MR. HARTMAN: Yes, it does.
22
                     MS. LUDWIG:
                                 And so are they going to be
23
          studying it both in the winter and the summer?
24
                     MR. HARTMAN: You're -- well, there's a
25
          component, and I don't know, I forget which program
```

```
Page 129
1
          they're using, there are components where you can
          monitor shadow flicker.
 3
                     MS. LUDWIG: Up-hmm.
 4
                     MR. HARTMAN:
                                   So if you know the turbine
 5
          latitude and longitude you calculate hours and
 6
          seconds per year.
 7
                     MS. LUDWIG: So they can tell.
 8
                                   So they can tell that.
                     MR. HARTMAN:
 9
          Generally it tends to be worst early morning, late
10
          evening, wintertime.
11
                     MS. LUDWIG: Right.
12
                     MR. HARTMAN: And typically your shadow
13
          flicker's going to dissipate as you move out.
14
          you're closer to the turbine basically you have a
15
          larger flicker, darker shadow. As you move away
16
          from that you get more -- the turbine tends to be
17
          more of a lighter shadow, thinner, perhaps somewhat
18
          wispy, for lack of a better term.
19
                     MS. LUDWIG: Okay. And then my second
20
          concern is the sound. I live in a valley, so I have
21
          a natural amphitheater.
22
                     MR. HARTMAN: Okay.
23
                     MS. LUDWIG: And where one was put on the
24
          map that I hear is just a preliminary map, it would
25
          be going down into my amphitheater, so I will have a
```

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          double sound. I will have a louder and an echo.
          Are they going to consider valleys, too, then, with
 3
          their sound?
                     MR. HARTMAN:
                                  National, would you like to
 5
          respond to that? I'm not -- well, I know they do
 6
          sound modeling. I don't know how the models account
 7
          for topography or valleys like the situation you're
 8
               Do you folks have an answer to that question?
                     MR. BURDICK: We can include topography
10
          in the modeling.
11
                     MR. HARTMAN: They indicated they can
12
          include topography.
13
                     UNIDENTIFIED: They can or will they?
                     MR. BURDICK: Will.
14
15
                     MR. HARTMAN: Will.
16
                     UNIDENTIFIED: And we can hold them to
17
          that, I can sue if they don't?
18
                     MR. HARTMAN: Any other questions?
19
                     MR. SCHULTZ: I've got one.
20
                     MR. HARTMAN: Yes, sir.
2.1
                     MR. SCHULTZ: I'm still kind of fuzzy on
22
          a question here, something you said. My name is
23
          Leonard Schultz and I live in the footprint or
24
          whatever you want to call it.
25
                     You said that it's 1,500 from the
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Page 131 1 residence or from the line of the person's property? Because, I mean, I own 40 acres going this way 3 (indicating), does it mean they're going to put it 4 right on the edge of my land? 5 MR. HARTMAN: No, it will be -- excuse 6 me -- with regard to your home, if you're a 7 nonparticipating landowner, if I understood that, 8 there would be 1,500 minimum from your home. 9 permit also requires, if you're a nonparticipating 10 landowner, a distance of at least fifteen -- excuse 11 me -- five rotor diameters from your property line 12 on the prevailing wind axis. So it would depend on 13 where your home is in relation to turbine, in 14 relation to your property lines. So whatever the 15 more stringent one is is how I read the permit as to 16 what would apply to that situation. 17 MR. SCHULTZ: Okay. And then I have a 18 father-in-law that lives down in Hayfield, so I go 19 by the Dodge Center one constantly. And every time 20 within about half a mile before we hit it until half 21 a mile afterwards, I can't hardly hear anything 22 because my ears get all plugged up. And I do have a 23 hearing loss of a certain frequency, and it affects me every time, and I bring it up to my kids 25 constantly.

Page 132 1 So you can't say that it isn't going to affect people because just them few that are along 3 that highway there affect me. And also, my in-laws live, a lot them, down around Dexter, Osage, down in 5 that area. And we have reunions down there, and the people say it sucks because they used to have 7 turkeys and deer and they used to feed the songbirds 8 and all that stuff. And they're nonexistent anymore, they have none of them. What is this 10 saying it's not going to affect our wildlife? 11 heard a person talking about the California condors, 12 and you talk about these beautiful windmills down 13 there, they darn near killed over half of them. 14 they didn't have to hit the windmills because it was 15 something about the turbine, the way they were 16 turning, it --17 MR. HARTMAN: For some wind turbines 18 versus other wind --19 MR. SCHULTZ: It killed them. 20 mean, we better be really looking into this because 21 I don't know about you, but I love seeing the 22 animals and I love nature and I don't want to live 23 in a desert region of no animals being around. 24 we better think about this, guys. If you live in 25 the Cities you may not worry about it, but we do.

Page 133 1 We love where we are. MR. HARTMAN: Thank you. Any other 3 questions from anyone? MR. SCHULTE: Thomas Schulte, 5 S-C-H-U-L-T-E. Thomas is your typical spelling. I know it's late. If you've been up as 7 long as I have, holding down a permanent job and a 8 military career, such as myself, it's been a long 9 day. 10 First of all, I appreciate your holding 11 this meeting and our commissioners and other elected 12 officials have taken it upon themselves to show up. 13 I represent what may be a worst-case scenario and 14 situation. I recently completed building a house, 15 did it myself. And you talk about environmental 16 issues, I built an ultra-efficient geothermally 17 heated and cooled home. It's got efficient light 18 bulbs throughout. So, yes, I grew up a farm myself 19 and I consider myself, you know, a steward of the 20 land so I tried to do this responsible thing. 2.1 Now, if you do your research on this, I 22 encourage you to read a book called The Wind Farm 23 It's a mathematical look at how those things are built, how they're funded, how inefficient they 25 are, how variable the power is that's coming out of

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                 They need backup generation so that when the
          power produced by the turbines drops, there's
 3
          something called spinning reserves that they need to
          have up and running so that when the wind farm
 5
          production goes down the spinning reserve can
          immediately be engaged and produce the power that's
 7
          necessary. You have to have a balanced load on the
 8
          grid at all times.
                     So when you're thinking about putting
10
          these turbines up and you're calling yourself an
11
          environmentalist, I'd like you to do some
12
          soul-searching and say that, you know what, I think
13
          I'm probably in error there, I'm not doing this for
14
          the environmental aspect of it, I am not doing it
15
          because they're beautiful, I'm doing it more than
16
          likely because I am profiting from it.
17
                     Again, thank you for your time.
18
                     MR. HARTMAN:
                                   Thank you.
19
                     Any other questions?
20
                     Yes, ma'am.
2.1
                     MS. HELEN McNAMARA: Helen McNamara,
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          H-E-L-E-N, M-C-N-A-M-A-R-A.
23
                     Ed McNamara from the Goodhue Soil
24
          Company -- or Association had a few concerns.
                                                           I saw
25
          that they were in the amended application that
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Page 135 1 Goodhue Wind or AWA Wind put out, and he reiterated them tonight. And I'd really like to know how 3 they're going to be addressed. MR. HARTMAN: With regard to that, 5 sometimes developers do obtain soil -- excuse me, 6 permits from soil conservation districts. There are 7 a number of other permits the company has to obtain, 8 storm water runoff, a number of other things from the PCA. 10 And a lot of times those -- there might 11 be some common overlap on those, so they've 12 generally been addressed through the normal 13 permitting process of other state or county 14 agencies. And, you know, typically I don't -- I 15 haven't looked at any of those recently, and I don't 16 know if PCA's modified the way they've done those. 17 I think they do so many of them now that 18 they tend to standardize them a little bit, but it 19 also depends on the individual conditions associated 20 with the project, which I do know include contour 2.1 and a number of other things. So a lot of stuff 22 does get considered by those issuing permits 23 specific to their function. That's about the best I 24 can do on that. 25 Any other questions?

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                      If not, I'd like to thank you for
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          attending this evening. We'll probably be here for
          a little while afterwards if you have other
          questions.
                      Again, my name is Larry Hartman. My
          phone numbers in here. Ray's the public advisor.
          Please feel free to call us at your convenience.
                      (Public comment concluded.)
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